INFLUENZA AND COLDS

W. T. Fernie

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INFLUENZA

AND COMMON COLDS

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INFLUENZA
AND COMMON COLDS

THE CAUSES, CHARACTER, AND TREATMENT OF EACH

BY

W. T. FERNIE, M.D.

Edwin Alfred Jones of Bath

> 'I doubt not but that in the end you will say with me that to anatomize this humour aright through all the members of our microcosmus is as good a task as to find out the quadrature of a circle, or to rectifie the Gregorian kalendar.'—*Democritus to the Reader.*

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PREFACE

A PREFACE is always a paradox; and in the present instance it seems particularly so. It says to the reader before beginning what the writer has to tell at the end. It partly explains the purport of the book, and partly apologises for shortcomings in its performance. Nevertheless, how helpful a preface must be to persons who run as they read, but who love to take a look at the winning-post before they start to cover the course!

For myself, I must fain be an egotist in these few prefatory lines. A most complimentary request from the publishers of this little work that I would put together in a practical form, which may be "understanded of the people," all the facts within my knowledge about colds in general, and influenza in particular, has prompted me to write the following pages. I have done this *currente calamo*, with a pen keeping pace with the times of the prevailing epidemic. Hence it must appear that what I have to tell concerning the influenza is fragmentary and progressive, rather than excogitated in any systematic way from the first. But I am old enough to remember the two previous epidemics; and I have been able to compare notes, which may now be thought specially useful.

My chief recollections about the influenza of 1837 consist in a filial horror at having then seen my father bled for the complaint; and in terrible childish fears at the time lest he should lose his life, as he almost did through the mistaken attentions of the doctors. Ten years afterwards—as a medical apprentice—I was in the thick of the next fight; and, whilst helping to do battle with the severe epidemic which then waged a wide warfare, I had my young ideas taught how to shoot straight, by the competent and hard-worked masters whose uniform I wore.

So my aim now has been rather to produce a serviceable and popular handbook than to trace learnedly the history of epidemics. Any one desiring to do this may glean full information on the subject from Copland's *Dictionary of Medicine.* Furthermore, whilst "bound by the tenets of no particular school," *nullius addictus jurare in verba magistri,* I have been able to write freely about common colds and their treatment, hoping thus to furnish my readers with defensive armour for meeting these subtle foes. It is a trite proverb that prevention is better than cure. Therefore my first object has been to try and teach how this may be effected with reference to common colds. And, in the second place,—seeing that what can't be cured may be endured more easily under proper guidance and advice,—I have done my best to give counsel of a practical sort on this branch of the subject. Now, without more preamble, though hindered a little by finding my cart in front of my steed, I take up the reins with a confident purpose, crack my whip cheerily, and trust for a prosperous journey on the high road of honest endeavour.

W. T. F.

London, 1890.

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PART I

INFLUENZA

OR

EPIDEMIC CATARRHAL FEVER; ITS NATURE, CAUSES, AND TREATMENT

> "Like a night cloud he passed: and from afar
> He bent against the shores, and sped the bolt:
> Then fierce, and deadly twanged the silver bow;
> First on the mules, and dogs, on man the last
> Was sped the arrowy shower: and through the camp
> Constant, and numerous blazed the funeral fires."
>
> HOMER, *Iliad*, Book I. v. 65-70.

PART I

INFLUENZA

WHAT doctors mean by an *epidemic* is a widespread malady which comes—*epi,* upon; *demos,* a people—over whole districts at once; in contradistinction to an *endemic* disease—*en,* within; *demos,* a people—as arising from localised causes within a limited area only.

The epidemic of Influenza, which is now prevailing in Russia, Germany, Denmark, France, Italy, and Spain, is believed to have also reached England, and to differ in some respects from former epidemics of influenza which have visited this country. It is variously attributed to malarious causes, to rinderpest, to microscopic germs, and to special climatic conditions; insomuch that the busy medical practitioners engaged in watching its assaults are by no means unanimous as to the precise character of the visitation, or confidently assured about the lesser details of its treatment. But, speaking broadly, two main unmistakable facts present themselves with respect to this epidemic: the one, that an active poisonous atmospheric influence has travelled sweepingly and swiftly from Siberia westward, throughout Europe, affecting whole populations severely, and attacking either the nervous, the pulmonary, or the digestive organs; the other, that, after a first convalescence from the illness, it is by no means uncommon for a serious relapse to occur; and that an unusual amount of prostration and strengthlessness immediately follows the primary attack. Manifestly, therefore, careful rest and warmth from the first, with antidotal means, and with abundant support judiciously administered, should form the leading features of successful curative treatment. It has been everywhere found that exposure or imprudence of action, before recovery was fully established, entailed a risk of lung-inflammation or of bronchitis, which might otherwise have been repelled or resisted.

How far the present epidemic actually differs from the Influenza, or epidemic Catarrhal Fever, which has prevailed repeatedly since 1741, and of which we had a serious English visitation in 1847, my readers may gather in some measure from the definition given of this last malady by Dr. Peacock in Quain's *Dictionary of Medicine*, bearing date 1882. He there says, "The disease is not to be regarded as simply an unusually prevalent common catarrh, but must be considered as a specific affection which appears occasionally over wide districts, and at, or about the same time; it is characterised by marked febrile symptoms; is often attended by serious complications, and causes great and prolonged prostration of strength. Early in the attack the pulse was quick and feverish and vibratory, though sometimes it was but little accelerated. At a later period it often became very rapid and feeble, or fell below the natural standard of frequency, being very soft and compressible, and occasionally intermittent. The tongue was at first moist, covered with the usual whity-brown fur, and red at the tip; subsequently it had a tendency to become dry. The breath had a peculiar offensive acid odour. Bleeding from the nose occasionally occurred, and sometimes to an alarming amount. The skin was generally moist, and the perspiration had a sour smell. The urine was at first scanty, but afterwards increased in quantity. In this form of the epidemic, affecting chiefly persons liable to disorder of the digestive organs and to rheumatism, nausea and sickness often occurred at an early period of the attack, and sometimes became urgent symptoms. There was often diarrhœa, and the pains in the head, back, loins, and extremities, which are present with more or less severity in all forms of influenza, were frequently from the first of a severe character, or increased with the progress of the disease till they constituted a predominating feature. Distressing restlessness supervened, with nervous agitation, and inability to sleep. Delirium also came on, amounting in some cases only to a little excitement and incoherence, but becoming so urgent in others as to require the employment of restraint to keep the patient in bed. It was remarkable, nevertheless, how completely this subsided in the morning. Notwithstanding the severity of these cases, they generally did well ultimately, though the patients recovered their strength but slowly, and often suffered long from lingering rheumatic disabilities.

"In the simpler cases during this last epidemic of 1847, the attack usually came on with suddenness. A sense of cold was felt down the back and between the shoulders, with chilliness and some shivering, succeeded by flushes of heat, dryness of skin, pains in the head, chest, and extremities, and prostration of strength. At first there was dryness of the nostrils and throat, with a sense of tightness or constriction of the chest, and with some dry, hard cough. As the illness advanced, copious running from the nostrils took place; and the cough became more frequent. The breathing was quickened; and distressing headache was felt, particularly in the forehead. These symptoms became increased in severity towards night.

"There were mental depression, listlessness, and general restlessness. In the greater number of cases entire loss of appetite was observed, with a sense of sickness, accompanied either by constipation or by diarrhœa; whilst the urine was scanty and high coloured. Prostration of strength was one of the most marked and distressing features of the complaint, with soreness, and dull aching pains in the chest, back, and limbs. The pulse varied in frequency, generally ranging from eighty to ninety, and rarely exceeding a hundred beats in the minute. It was uniformly very compressible, and, after the first day or two, feeble. The ordinary duration of the illness in this form of the epidemic might be stated at from three to five days in the milder cases, and from seven to ten in those of a more severe description. But the disease, on its subsidence, left the patient for some time much prostrated, whilst still troubled with loss of appetite, inaptitude for bodily or mental exertion, and having more or less of a harassing cough. Furthermore, there was an invariable tendency to relapse.

"During the prevalence of this particular epidemic of influenza, the disease was often combined with bronchitis ; which sometimes led on to inflammation of the lungs in weakly subjects, or when great prostration of strength had occurred. But even in such cases the illness was not very fatal; the lungs became but slowly consolidated, and generally recovered their freedom of action with more than usual readiness."

Such is the account given by a high medical authority of the influenza visitation which pervaded this country in 1847. In the present epidemic it is likewise particularly true that relapses are very apt to occur. This has been noticed in St. Petersburg, Vienna, Paris, and London. A well-known practitioner in the West End writes to the *British Medical Journal* (4th January 1890), "I am convinced that this is a most dangerous illness to trifle with, owing to the relapses, which, so far as I have seen, have occurred on the eighth day. I think the public should be warned to go to bed directly they have the shivering and the pains in the back and loins."

Now also, the poison of influenza having attacked the system, does not invariably declare itself through the lining membranes of the nose and the chest. In some cases catarrhal symptoms of any kind are absent, or are very slight, whilst nervous prostration is present to a severe degree. In other persons it is the stomach and digestive organs which are now assailed, leading at first to violent vomiting, or to colic and diarrhœa. The earliest cases were observed in St. Petersburg about 15th October 1889; and by 12th November the malady had spread over nearly the whole of European Russia. In Berlin the influenza broke out towards the end of November, and spread very rapidly. It prevailed very severely during the middle period of that month; and began to decline by 25th December. Meanwhile it had spread swiftly in Central and Southern Germany; and it had also extended westward, having appeared in Brussels and in Antwerp. The disease first became epidemic in Paris about 26th November, when a considerable number of persons employed in the Magasins du Louvre (the Whiteley's of Paris) were attacked. Also, such a large number of cases occurred at Monte Carlo that the attendance at the gaming-tables was seriously interfered with. About the middle of December the epidemic reached Malaga and Madrid;

and by the end of that month most of the Spanish provinces had become affected. Some alleged cases were also reported at Rome during December. In England as yet the disease has not attained any serious proportions; though undoubtedly an epidemic of influenza has now reached London and its western suburbs; and the malady has certainly prevailed recently among horses in this country. One firm of carters in London had more than a hundred horses laid up simultaneously a few weeks ago; and one of the railway companies a still larger number.

During previous epidemics of influenza, the coincident prevalence of a similar disease has been noticed among domestic animals—as dogs, cats, cows, and particularly horses. In the latter quadruped the indisposition begins suddenly with sneezing, followed by shivering, fever, bronchial irritation, and a short dry cough. Many horses have been attacked simultaneously; and in one such epidemic, it happened in America that its appearance in a large city was followed by the withdrawal of horses and mules from the streets, until the busiest thoroughfares assumed the stillness of the Sabbath.

Cases of the present epidemic were reported in New York and Boston during last December; and by the end of that month a considerable number of persons had been attacked in various parts of the United States.

In the existing epidemic the chief symptoms at first are those of high temperature, and headache about the forehead and brows; for the most part with furred tongue, constipation, and a general sense of great languor.

The temperature runs up at once to 103° or 104°, or even higher; but the pulse is not raised proportionately with the temperature. Symptoms of catarrh of the nostrils and head appear in some cases; whilst in others there is catarrh of the throat also, and of the further air-passages. In most cases there are heaviness and uneasiness about the back, the shoulders, and the limbs. The duration of the attack is short, with a fall of temperature to normal by the third day; but often with a slow and prolonged convalescence to complete recovery of the usual strength and energy. By reason of the suddenness with which the symptoms occur at their onset, and of the rapidity with which the illness reaches its maximum of severity—influenza has been called in some parts of Germany "Blitz catarrh"—lightning cold; and in France "la grippe,"—as derived from the verb "gripper"—to snatch.

The notion that climate, weather, or season have to do with the causation of an Influenza Epidemic seems to be disproved by numerous facts. One of these is sufficiently striking—viz. that in 1837 the epidemic prevailed at the same time and consequently at exactly opposite seasons in the northern and the southern hemispheres; that is, during midwinter in England, and during midsummer at the Cape of Good Hope. Similarly the theory of communication of the disease by human intercourse through personal transmission of a microscopic germ appears to be equally untenable; though Dr. Siefert of Wurzburg not long ago announced his discovery of "influenza cocci" in the expectoration examined by him from all his cases of the illness, but which he failed to find in that from ordinary bronchial catarrh. For, the almost simultaneous outbreak of the epidemic in places widely apart, and the seizure of a large proportion of the population of a town or district within the course of a few hours are circumstances which forbid the thought that the disease depends on transmitted infection as ordinarily understood.

Anyhow, it seems that every fact ascertained about influenza shows the presence of some powerful depressing agent which has seized upon the large animal nervous centres, or has entered the blood.

From the high fever at first, and the secondary exhaustion of strength, it is clear that the spinal cord, with its dependencies, is especially shocked, even in a simple attack.

Then the individual temperament, together with the state of health at the time, and the existing sanitary conditions determine the particular features and the severity of the illness in each case.

It need not be said again that the treatment of influenza, though more or less negative, is of momentous importance. In the earlier epidemics of this disease, when its essential character was not understood, doctors bled their patients to begin with, and tried to reduce the initial fever by giving tartar emetic and other lowering medicines. Furthermore, they ordered a spare diet altogether of an unstimulating sort. The immediate consequence was that many patients died from collapse of strength, even when the attack was simple and uncomplicated. A complete change of tactics had quickly to be made; when the substitution of contrary measures, so as to maintain the vital powers, to economise the nervous forces, and to recruit the flagging energies, speedily led to happier results. This same line of general treatment must likewise be prudently adopted in all cases of influenza which occur to-day.

From the first onset of the attack, as soon as sneezings, shivering, aching of the bones, and a sense of having caught cold are felt, the patient should either go to bed, or recline on a sofa in a comfortably warm room, discarding his business, and accepting the position of an invalid to be nursed and watchfully cared for. If the dry, burning, feverish reaction has not already commenced, a footbath of water as hot as it can be conveniently tolerated should be taken for eight or ten minutes; and the feet should be dried afterwards by an attendant or companion, so as to prevent personal effort or tiring exertion. Hot weak tea or barley water, or some similar light hot beverage, should be given from time to time to promote perspiration. If the bowels have not been recently or sufficiently moved, a moderate dose of tasteless castor oil, in quantity according to the age of the patient, should be at once administered.

This should be put into an empty bottle which has been first made hot. Then twice or three times as much boiling milk should be added to the oil, and shaken up with it in the bottle so as to form a cream, which should be swallowed when cool enough, and which will not be found at all nauseous. If there is general chilliness of skin surface as yet, whilst the pulse is small in volume, though beating quickly and sharply, and especially if uneasiness is felt about the bowels and the stomach, with an inclination to sickness, then some hot fomentations should be applied in a systematic manner over the whole belly for from fifteen to twenty minutes in all. With this view, a blanket folded lengthways should be placed across the bed under the lower back and the loins of the patient, with one end of this blanket projecting from beneath the patient on either side. Then one of two pieces of flannel, properly adapted in size for the purpose required, should be wrung out of very hot water, and should be straightway applied twofold as hot as it can be borne over the bowels and stomach next the skin; whilst the ends of the dry blanket are brought over, first one, and then the other, across so as to cover up the hot moist flannel. The bedclothes should be next drawn up over the patient in the usual way; and this hot flannel should remain applied for four or five minutes. At the end of such time the first flannel should be quickly removed, and its place be speedily occupied by the second flannel already wrung out in very hot water, and prepared as was the first.

This should be likewise kept applied beneath the dry blanket for four or five minutes, and then changed; whilst the process of fomentation, as now described, should be prolonged in this manner for fifteen or twenty minutes altogether; at the end of which time the last hot flannel should be removed, and the skin surface which has been fomented should be wiped gently dry.

The whole proceeding should be carefully conducted without entailing any fatigue or any harmful exposure to the patient. If needful, the same series of hot fomentations may be repeated in a like way after four or six hours. The object aimed at by this course of action is to soothe the whole system through its main nervous digestive centre, under the shock it is now sustaining; also to divert blood from oppressed parts into the general channels of circulation.

A fixed hot secondary stage of persistent feverishness ensues but seldom under an attack of influenza. The febrile heats, with rapid rise of bodily temperature, are constantly varied by cold shiverings. But if a lasting state of feverish heat becomes more and more pronounced as the illness advances, on the first or second day, then signal relief may be afforded by cold wet packing of the trunk. This is to be effected by spreading a double blanket along the half of the bed on which the patient is not lying, over this is laid lengthwise a towel wrung well out of cold water. The patient is then promptly removed from the other part of the bed, and is placed lying with the bare back along the wet towel; whilst a second cold wet towel well wrung out is laid along the whole trunk of the body in front. The dry blanket should next be brought closely over by first one half and then the other, and each must be well tucked under at the opposite side; and the bedclothes are to be forthwith drawn snugly over the patient, so as to enhance his comfort. No sensation will be felt by him other than that of direct grateful relief; the duration of which will vary just as the wet towels become hot more or less rapidly with the heat deduced from the fevered body. As soon as the sense of ease and of comfort gives place to returning feverish heat, the wet towels should be removed and the skin surface of the parts which have been packed should be rapidly sponged over with tepid water and gently dried. In most cases from twenty to thirty minutes will suffice for the length of time of the packing; and the patient will then remain lastingly relieved from the exhausting feverishness. But if a recurrence of dry burning bodily heat should, after a while, declare itself, then the same process of packing may be repeated once, or perhaps twice, at intervals of two, three, or four hours, and followed each time by tepid sponging over.

If it should be found that the patient is already hot and fevered, with a dry skin, and with uneasiness about the stomach and bowels, immediately the malady has first shown itself, whilst the pulse is small, quick, and feeble, then (since the hot fomentations are no longer indicated, and since the packing of the whole trunk may not be well tolerated) a cold wet compress should be applied over the whole region of the bowels and upper belly only. To make this, a piece of double linen wrung well out of cold water should be covered over by a piece of thin waterproof tissue of the same size; and then with a folded square of flannel or a light small blanket over all. This appliance should be put on with the wet linen next the skin, and should be worn continuously as long as the linen becomes readily warm after it is wrung out afresh, and reapplied every three or four hours. When the feverish symptoms have altogether subsided, a general tepid sponging of the whole body and of the limbs may be effected whilst the patient is lying down, or is seated in a chair; and this sponging over (followed by somewhat brisk dry rubbing) may be repeated daily. But the injunction already given regarding the necessity of thorough bodily rest from the first must extend to several days of the convalescence—seeing that any premature return to the exertions of business, pleasure, or active movement would entail the grave risk of a relapse.

Concerning the medicines which should be given to relieve influenza, or to facilitate its safe course, or to abort its first assault, many wild notions have been lately propounded in the newspapers, and have come in other ways to occupy the public mind. In a leading society journal the editor recently stated that as soon as knowing himself to be attacked, he *exercised his common sense*, and at once "took thirty grains of quinine, which settled the fever"; that he met his cough with unlimited squill pills, which "soon settled that trouble; and that having retired quickly to bed he heaped on blankets, and took nothing but slops; after four days of which treatment he felt quite well again." Another self-constituted medical authority has praised antipyrin to the skies as a specific for curing influenza speedily; whilst salicylates have found equal favour with a third; and ammoniated tincture of quinine in large doses with a fourth. But each of these nostrums may be fraught with danger if rashly employed; and would constitute in all cases a coarse questionable method of cure—if, despite the dangers involved, some benefits should nevertheless seem to be realised.

The first object aimed at in medicinal treatment should be to allay the febrile excitement which the animal nervous system begins to betray as soon as the poison of the illness operates. And for this purpose quinine may justly be thought of as a tried antidote to malarious and intermittent fevers, besides being hostile to miasmatic germs. But quinine is by no means free from objections, being badly borne by many patients, and often productive of headache, deafness, and digestive derangement, especially when given in material doses. Likewise antipyrin and salicin frequently cause serious vital depression; whilst squills are certainly beyond the mark, as liable to irritate the stomach violently.

A safe and sure way in which medicinal help may be rendered for reducing the fever is by giving in a properly diluted form either the tincture of aconite or the tincture of green hellebore.

From the druggist a mixture should be had of pure water, two fluid ounces, with either three drops of the ordinary tincture of aconite added thereto, or with six drops of the ordinary tincture of green hellebore (*Veratrum viride*) added to the two fluid ounces of water. The mixture thus made in either way will contain six doses, each of one dessertspoonful. A dose of the aconite mixture is to be preferred in most cases, and should be given immediately; whilst it should be followed by a similar dose of the same mixture every three or four hours, until the feverish heat is reduced and the febrile excitement allayed, and the skin gently moist; when the bodily temperature (if it can be ascertained) will have returned to the normal degree of 98°·3′. But if the pulse is quite feeble and small, though feverishly excited and quick, whilst it is thought the heart may be feeble and embarrassed, then the mixture made with tincture of green hellebore may be substituted from the first for that containing the aconite, and may be given in precisely the same way as has been directed for administering the aconite mixture.

The doses prescribed here of both medicines are adapted for an adult patient, and should be proportionately diminished for a child, according to age. Moreover, the lay use of a medical thermometer for ascertaining the bodily temperature from time to time is to be advised, since a watchful observation of this is important so as to determine about giving the medicines and support with more or less frequency, and as indicating the advance or retrocession of the disease. Such a "medical thermometer" may be readily obtained through any wholesale druggist, or at the co-operative stores. It consists of a glass tube partly filled with quicksilver, and with an elongated bulb at one end, likewise filled with mercury and forming part of the tube. The glass column, having the tubular centre, is graduated in degrees from 95° to 110°, and with decimal points subdividing each degree into ten parts.

When put into use the thermometer should have the mercury shaken down to 98°·3′ (which is the normal temperature of health), and should then have its terminal bulb placed well under the patient's tongue, with the lips closed. After having remained in this position for a full minute it should be withdrawn, and its graduated scale should be inspected so as to see how high the mercury has risen under the heat of the body within the mouth. As a rule it will indicate 103° or 104°, when the initial stage of fever is at its height at the beginning of an attack of influenza. Beyond this a further rise of the mercury indicates some danger. The temperature of a patient should especially be taken at night, and in the morning during any feverish attack. Always before making use of the medical thermometer it should be freely cleansed in cold water.

If together with the fever there are dryness and irritability of the chest-membranes and throat, with some bronchial cough, and a sense of tightness, moderate doses of ammonia should be given at intervals—alternately with the aconite, or with the hellebore, whilst the feverish state continues, and subsequently by itself as long as the bronchial irritation persists. Also the same remedy will serve admirably to counteract vital depression, weakness of the pulse, and liability to faintness. Having these purposes in view, four or five grains of carbonate of ammonia should be given in two tablespoonfuls of cold water every three or four hours to an adult, and half this quantity to a child. German experts who have set themselves to prove the toxical effects of carbonate of ammonia in doses gradually increased until poisonous effects began to supervene, have found that the lining membrane of the bronchial tubes then became inflamed, whilst a short and incessant bronchial cough occurred, with a constant tickling uneasiness in the windpipe. Very full doses of carbonate of ammonia also caused headache and vital depression. Hence it has been justifiably assumed and incontestably proved that similar morbid conditions to the above, when self-engendered in illness, may be cured by this same medicine when given in doses short of any injuriously potential strength. For a like reason a tincture of eupatorium (American "bone-set, or ague-weed") has been found to possess a remarkable power of affording relief to the bone pains of influenza during its accessory fever. The group of symptoms produced by this medicine in provers who have systematically tested its doses gradually increased to a poisonous point are, "intense headache, with soreness of the scalp, soreness of the eyes, redness of the face, prostration, some nausea, soreness in the region of the liver, high-coloured urine, bronchial irritation, and violent bone pains." These symptoms when collated form an accurate picture of influenza, and fully vindicate the use of this remedy in moderate doses to modify the complaint. A reliable tincture of the eupatorium perfoliatum can be readily procured from several of our leading druggists, and should be given in doses of five drops at a time, with a tablespoonful of cold water, in alternation with the aconite tincture, or with the hellebore tincture already prescribed. Subsequently, in most cases of uncomplicated influenza, if the tongue is fairly clean, and if the stomach is in no state of distress, a tonic remedy should be commenced on the third or fourth day, either as quinine, in doses of one grain three times in a day, or as tincture of yellow cinchona bark, which will be much better tolerated by many patients than the quinine itself, this being the pure strong essential alkaloid of the yellow bark.

If quinine is chosen as a tonic, its admixture with tincture of orange-peel will help to prevent it from causing headache. The so-called tincture of quinine which the British Pharmacopœia orders, and which druggists supply as such, consists of one grain of quinine to each teaspoonful of tincture of orange-peel, so that a teaspoonful of this tincture of quinine may be given three times a day with a tablespoonful of cold water shortly after food; or half a teaspoonful of the tincture of yellow cinchona bark may be given in like manner three times a day with water as a milder dose. The question of giving such other medicines as may seem requisite if symptoms of active bronchitis or of an inflamed lung should arise to hinder and interrupt convalescence shall be carefully considered presently.

In simple cases, besides giving these appropriate medicaments from the first, some supplementary help may be afforded externally in the form of antiseptic and antidotal inhalants. Though the existence of any special microbes or germs as causative of the epidemic malady has been doubted, yet the miasmatic state of an influenza wave-cloud can scarcely be questioned as spreading over every affected district, and such means as have been found to neutralise elsewhere baneful miasmata should be of undoubted assistance in disarming this mischievous assailant. For instance, the Australian blue-gum tree (*Eucalyptus globulus*) "grows rapidly, and aids in destroying the malarious agency which is supposed to cause fever. It absorbs as much as ten times its weight of water from the soil, and emits camphoraceous antiseptic vapour from its leaves." As long ago as in the spring of 1867 a large farm, some twenty miles from Algiers, was noted for its pestilential air; thirteen thousand eucalyptus trees were planted there, since which time not a single case of fever had occurred up to 1875. Dr. Sidney Ringer says in his *Handbook of Therapeutics,* 1888: Eucalyptol (distilled from the essential oil of the *Eucalyptus globulus*) "destroys the lower forms of life, and is a powerful antiseptic and disinfectant. It is more antiseptic than quinine, and is highly commended for bronchial catarrh." By reason of these properties the eucalyptus and other similar plants of an aromatic, resinous, camphoraceous nature promise to render useful help in neutralising the miasmatic surroundings of an influenza patient; also in acting as antidotal remedies on the membranes of the nose, mouth, throat, and air-passages when first assailed by the morbid miasm. If some leaves of the *Eucalyptus globulus* can be readily obtained (and most nursery-gardeners now keep a stock of the plants), these, according to Dr. Murray Gibbes, will answer best for the purpose desired. He says, "I tried experiments with various preparations of eucalyptus, such as the tincture, and the essence applied with a spray-producer, but could not detect the characteristic odour in the steam; then I poured boiling water on the leaves, and at once the blue-gum was smelt by every one in the room. . . . The disinfectant I used very successfully in an epidemic of diphtheria was made by pouring boiling water on blue-gum leaves in a tub or jug placed beside the bed, and changed every half hour. . . . Thirty-seven cases in which this treatment was carried out recovered without a bad symptom."

In the event of not being able to procure any fresh leaves of a eucalyptus plant, then *Eucalyptol* should be got from the druggist, and employed for inhalation directly the first symptoms of influenza begin to show themselves by irritation, dryness, stuffiness, and discomfort of the nasal and throat passages. Some of the eucalyptol may be diffused around the patient and about the chamber by a spray-producer; whilst, by pouring eucalyptol on water nearly boiling, and holding the mouth and nose over this, the medicated steam can be freely inhaled.

The eucalyptus oil is not poisonous or irritating to the skin, or to mucous membranes, therefore it can be made use of as I have advised with impunity. For this inhalation with medicated steam, two teaspoonfuls of eucalyptol may be added to a quart of boiling water in an open basin, or in a wide-mouthed jug. Mr. Mayo Robson carried out a series of experiments with eucalyptus oil in 1882, and he sums up his account of these by saying, "The experiments related go far in my opinion to prove that in the vapour of eucalyptus, cajeput, and other such volatile agents, we have powerful antiseptics which, even at the ordinary temperature of the atmosphere, may so saturate the air as to kill all infective particles." Another medicament which without doubt acts as an antidote to any morbid irritation set up by noxious air in the mucous passages of the nose, throat, upper chest, and the frontal sinuses, is iodine in a properly diluted form. Dr. Ringer says in his book on therapeutics that iodic irritation (as produced by this medicine when too freely administered) is characterised by "running at the nose, with occasional sneezing, and with frontal headache, the nose becoming reddened, and at the same time swollen." Also "the lower portions of the respiratory tract exhibit signs of the same irritation as is seen in the upper; hoarseness of the larynx occurs, and even the lungs show the influence of the drug by congestive oppression, if not by actual inflammation." Such being the case as regarding the action of this drug when toxically employed on sound membranes, it is found that under the irritated condition of the same membranes, which the influenza poison quickly establishes, the topical use of iodine vapour sufficiently weak is most usefully antidotal. With which view a suitable combination of iodine with carbolic acid and ammonia in the form of smelling-salts is prepared by most druggists, and is supplied as "carbolised iodine" in a handy little wide-mouthed bottle, well corked, the contents of which can be readily and freely sniffed at from time to time, as soon as any sense of catarrhal irritation in the nose, eyes, frontal passages, and throat is perceived.

Several years ago, for many weeks the blank spaces of walls and hoardings about London were made a source of wonder and speculation to the passers-by because of displaying large posters which revealed in big portentous characters only the mysterious sesquipedalian word "Antimorihygiastikon."

After setting the populace agape with marvel and amazement for a time long enough to suit his purposes of trade, the originator of this ingenious advertisement solved the puzzle by announcing a small pocket-apparatus bearing the cabalistic title which the posters had so long and so surprisingly announced.

This consisted of a small tube open at both ends, and supplied with cotton wool loosely filling the middle of the tube, this wool being saturated with carbolised iodine. Also attached by a short string to each end of the tube was a cork which might be inserted or withdrawn at will. The instrument was designed for speedily counteracting influenza or ordinary catarrh as soon as the first symptoms were perceived. Then the two corks were to be withdrawn, and air was to be freely inspired into the mouth and nostrils through the medicated wool. At the risk of seeming pedantic I will give the interpretation of the polysyllabic name which this little apparatus possessed, and which was supposed to signify "a death-averting, health-saving remedy."

There is one other topical application which should be mentioned as specially calculated to afford relief against the first assaults of the influenza poison on the mucous membranes of the nose, throat, and chest, viz. sulphur.

In 1883, Monsieur d'Abbadie of Paris proved by his admirable researches that ague and intermittent fevers are unknown affections among the operatives in sulphur mines situated in malarious districts; and since then several officers have reported their immunity from miasmatic fevers in India since making use of sulphur as a medicine for this purpose. As long ago as in 1868 Dr. Dewar of Kirkcaldy and Mr. Pairman of Biggar made most successful use of sulphur, in the form of sulphurous acid, as obtained by burning this mineral in the atmosphere breathed by the patient, and a solution of which gas in water was also sprayed by them into the air-passages. A very important result which they obtained was to show that the fumes of sulphur constitute one of the most potent disinfectants known; and that in the form of spray these fumes may be employed as most helpful in annihilating contagious miasmata or germs affecting the human subject. Any druggist will readily furnish a bottle of sulphurous acid gas held in water, of the proper strength for use with an ordinary spray-diffuser; and by this means a sulphurous spray can be easily and very safely projected now and again far back into the mouth and throat, and well up the nostrils, so soon as the localised premonitory symptoms of influenza are felt in these parts.

It next devolves upon me to particularise the special medicines and the other means which should be brought to bear when an attack of influenza is complicated in its progress by predominant troubles of the bronchial passages and of the lungs. In such cases the slight discomforts affecting the mucous linings of the nose, forehead, throat, and upper chest become more marked, and lead on to symptoms of croup or of acute bronchitis, with difficult painful breathing, or of pneumonic inflammation of the lungs themselves. The cough now becomes troublesome by its frequency, and the expectoration is scanty and sticky; the pulse is quickened and the tongue furred. At the same time the number of respirations in a minute is quickened to thirty or more, and the aspect of the face is dusky. Meantime there is but little feverish heat of the skin, except at first. Marked prostration of strength characterises this complication; whilst frontal headache and aching of the limbs are still present. If the bronchial difficulties and oppression continue to increase, then the breathing becomes more laboured, and small moist sounds of crepitation (like hairs rubbed together) may be heard by a practised ear with the inspiration, first behind in the lungs, and at their base; afterwards in front. These sounds denote the presence of fluid in the smallest terminal air-tubes of the bronchial passages as extravasated from turgid blood-vessels around these tubes.

Delirium, fluttering pulse, increased lividity of face, inability to breathe except whilst propped up in the bed, and the stoppage of all expectoration, denote the worst stage of this bronchitis in extreme cases, such as sometimes occur among the very young, and very old, feeble patients. But, of course, medical aid would have been sought as soon as the earlier symptoms of a threatening character, such as are detailed above, had declared themselves; so that it will be needless to consider here for any practical purposes the advanced stages of serious bronchitis ensuing upon influenza.

In simpler cases, when what has been at first mere dryness and tickling of the throat, with slight insignificant cough and a little hoarseness, associated with signs of cold in the head, nose, and forehead, begins to become aggravated, and more troublesome, then a hot linseed-meal poultice, with which a little flour of mustard has been admixed, should be applied all across the front upper chest, beneath both collar-bones, and over the upper part of the breast-bone.

This poultice should be kept on for a couple of hours (unless the skin becomes severely irritated by the mustard, which is quite unlikely); and on its removal the skin over which it has been applied should be sponged with lukewarm water, and protected by a double layer of soft dry flannel; or, a light tepid wet compress with waterproof tissue, and dry flannel above the wet linen, may be put on and kept applied all across the upper front chest. If this is done, then the wet linen of the compress should be wrung out afresh in tepid water and reapplied every three or four hours. If the compress is not adopted, and if the bronchial irritation should persist after the first poultice has been removed, then a second hot poultice (made without mustard) should be similarly applied, and should be kept on for three hours or more. And even a third hot linseed-meal poultice may be required before the symptoms of threatened bronchitis have been sufficiently subdued. If the weather is cold, with a keen dry air affecting even the atmosphere of the sickroom, a bronchitis-kettle should be set going on the fire so as to make the atmospheric surroundings of the patient softly moist and soothing; but not too hot.

Some gently expectorant remedy may be given in combination with the ammonia every two, three, or four hours; but no powerfully nauseating or depressing drug may be allowed.

Four or five drops of ipecacuanha wine will answer well enough for each dose of this sort to a young or middle-aged patient; whilst half a fluid dram of tincture of senega will be more appropriate for an aged and feeble person. Presently also some infusion of serpentary root—a fluid ounce of this, with ammonia and with the senega for each dose, will be admirably restorative for any such patient in years, and of limited strength. The infusion of senega may be readily obtained from any good druggist.

Whilst the feverish stage of bronchial influenza is lasting it is better not to give alcoholic stimulants, unless special feebleness is present, as indicated by a small faltering pulse, a livid aspect of face, and laboured breathing.

Nevertheless, under all circumstances during an attack of influenza, and particularly when the symptoms of bronchial complication seem to threaten, plentiful nourishment should be administered so as to maintain the vital powers from the first.

Meantime the ammonia as an active medicinal stimulant which quickly diffuses itself in the blood, and which is the remedy, *par excellence*, for subduing bronchial congestions, will help materially to sustain the flagging vital energies.

Weak tea with plenty of milk in it; milk and barley-water in equal quantities; cocoa; weak animal broths, of mutton, chicken, or veal; gruel and whey, will be the most suitable nourishment on the first two days of an attack. Beef-tea may follow as the second day advances, and may be continued subsequently, in conjunction with the lighter solids. When the bodily temperature has become natural, whilst the skin is moist, and the tongue clean, with most patients on the third and fourth days, a moderate allowance of alcohol in some form twice or three times in the twenty-four hours will be of real service, such as a tablespoonful of brandy or of whisky at the mid-day meal and with food in the evening, mixing this spirit with hot or cold water as may be preferred. But if the vital powers seem depressed from the first, whilst the pulse is thready and uncertain, and the countenance dusky, some bronchial distress being already developed, then alcoholic support must be given straightway in the form of whisky punch, or of port-wine negus, or of champagne, and must be repeated every one, two, or three hours until the pulse rises, and the skin becomes moist, and the facial aspect improves, and the breathing is decidedly relieved. At the same time under these latter conditions plenty of good liquid nourishment must be administered without stint, though not so as to run a risk of overloading the stomach; and the hot poultices must be kept applied over the upper front chest, or the tepid-water compress be worn next the skin over the same region.

The bowels should be regulated as may be necessary by a seidlitz powder mixed in half a tumblerful of water altogether, or by some effervescing saline (pyretic, or Lamplough's), or by castor oil blended with boiling milk, or by the use of an enema of lukewarm water.

The room in which the patient is placed should be kept at a temperature of about 65°. As soon as all fever and headache, with pains in the limbs, and catarrh of the chest have disappeared, the patient may resume his ordinary diet, whilst exercising a proper amount of care in the selection of his food; and the tincture of quinine may now be taken three times daily, in the way I have already particularised.

In the case of an aged and feeble patient, with whom bronchitic symptoms still linger to some extent, a half-dram dose of the tincture of senega may be usefully given, in combination with the tincture of quinine, three or four times in the twenty-four hours. Chicken and white fish and game (not long kept) will be the best solids to begin with, when substantial food is resumed.

Outdoor air and exercise may be sanctioned when all active signs of indisposition have become unquestionably subdued; but a careful regard must be paid to the climatic conditions and the season of the year, as well as to the physical powers of the patient and to the degree of severity which has characterised his recent symptoms. The prolonged prostration of strength which succeeds even what has seemed a mild attack of influenza, and the general tendency to a relapse towards the sixth or seventh day, should be circumspectly remembered when the dietary is being enlarged, and when some freedom of movement is permitted as convalescence begins to advance. A sense of abiding weakness, with disinclination for exercise or work, and with a poor capricious appetite, often persists for three or four weeks after the catarrhal fever and the positive symptoms have been well surmounted; and not seldom at the same time more or less bronchial cough continues to tease and be troublesome. Likewise rheumatic pains about the limbs, and in the spaces between the ribs, are felt at times during convalescence; or neuralgic paroxysms affecting the side of one head, or one temple and eyeball. As long as these evidences of impaired strength express themselves more or less sensibly, all actual bodily fatigue must be guarded against; and all exposure to cold damp weather, to east winds, and to night air prevented.

On the occasion of any relapse, the ammonia with tincture of yellow cinchona bark should be again taken every three, four, or six hours; whilst bodily rest, and nervous repose, and comfortable warmth must be again sedulously regarded.

Broadly, indeed, throughout the whole course of influenza, whether simple or complicated, a more careful management and a more generous treatment by support and stimulants, are invariably called for than are needed in simple catarrh not of a specific sort, or in more ordinary febrile affections. The patient must take to his bed or to the sofa from the first; and after passing through the several stages of the malady, he must not become impatient, because, by the very reason of this malady, which is more or less unique in its prostrating effects, his convalescence is slow and retarded.

As preventive measures against being attacked by influenza, all fear of the disease should be resisted as far as possible, whilst the general strength is maintained at its best by nutritious wholesome food, regular meals, sufficient sleep, warm woollen clothing next the skin, avoidance of tobacco, except very sparingly, the moderate use of stimulants, or abstinence from their use; and due care against cold or damp. Quinine is advised by some authorities to be systematically taken in doses of from three to five grains twice or three times a day, as a preventive measure against influenza; but I am persuaded that with many persons this medicine, if administered in such a way, would set up a febrile state independently of the disease against which its use is aimed; and would so disturb the nervous and digestive economics as to predispose the patient to its attack. Some reassurance may be derived from the fact that an epidemic influenza does not occupy any region longer than from six to eight weeks, and is commonly of shorter local duration; also from the knowledge that hitherto the present epidemic is of a more lenient and restricted type than was its predecessor in 1847; by which, as the late Dr. Peacock estimated, who watched its course throughout, more than one-quarter of the whole population of London was affected.

In a penultimate epidemic which invaded America in 1826, before the times of railways and steamboats, we learn on competent medical authority that "a whole continent as large as North America, together with all the West Indies, was victimised within the course of a few weeks, while the inhabitants could not, within so short a time, have had any personal communication, or held any intercourse whatever, across such a vast extent of country." This puzzling fact certainly goes far to negative the supposition, which otherwise forces itself convincingly on the minds of those who have specially studied the question, that influenza as an epidemic travels mainly from district to district through transmission by human intercourse.

A "leading London physician," within the last few weeks, using one of our public journals as his mouthpiece, has said, with more force than refinement of diction, "Lots of cases of influenza are doubtless caused by the receipt of letters from localities where the epidemic exists. Banking houses have caught the disease by means of bonds recently come from an infected district. Anyhow, I have no doubt in my own mind that paper will carry the infection."

During previous epidemics of influenza, the malady was found to exercise a deleterious influence on persons already weakened by other ailments, and thus to gain more discredit as a dangerous disease than of itself it actually deserved; which condition of things may be shrewdly suspected to have now recurred, so as to account for much of the present panic.

It was noted also, according to most authorities, that one attack did not confer an immunity from a second, or even a third seizure afterwards; and we may fairly infer that with respect to the present epidemic the like experience will in some cases be eventually realised.

Furthermore, it is an indisputable fact that those persons who are most nervous and fearful about catching this influenza become thereby specially liable to suffer from the malady. Apprehension, and a vigilant timidity lest the epidemic should overtake one, will do much to invite an attack. For, timorous dread always weakens the nervous system at the moment, and lessens the power of bodily resistance to any morbid assailant. The equanimity is disturbed, the appetite prevented, digestion discounted, and general health lowered in tone; so that in these ways the absorption of such an external miasm as that of influenza into the blood is rendered doubly probable. Even if, allowing that a specific microbe is the element of disease which must invade the system before an attack can be induced, it is certain that a sound self-reliant person in robust health, and devoid of fear, stands a far better chance of defying the subtle advances of any such microbe than does his weaker-bodied and more feeble-willed fellow-man.

By long chalks, as the saying runs, the best way to escape the epidemic is to religiously avoid reading about it in the daily papers, or talking about it at every chance rencontre with timid and curious quidnuncs; whilst at the same time eating and drinking heartily and wisely, getting as much sleep as the body and mind honestly need, securing all necessary physical warmth and protection from climatic risks, and practically remembering in all the doings and the diet of daily life that trite old maxim—"A merry heart goes all the day; your sad tires in a mile, ah!"

Auxiliary details of treatment may in some cases seem to be required, beyond the general plan of remedial proceedings which has been already discussed; such details being designed to meet special symptoms dependent on individual peculiarities of temperament and constitution. When a rose-coloured rash makes its appearance simultaneously with high temperature, and with catarrhal flux from the nose and eyes, as well as with frontal headache, it will be found useful to administer small doses of arsenic, in alternation with the aconite or the green hellebore, as the case may be.

Every druggist keeps what is known as Fowler's solution of arsenic, which uniformly contains one grain of arsenious acid in 120 drops of the solution. Two drops of this Fowler's solution may be added for an adult (or one drop for a child) to each dose of the ammonia mixture which is to be given, as already explained, at alternate intervals with the aconite or the green hellebore. The arsenic is given so as to obviate in these small doses the symptoms now present of nasal and frontal catarrh, suffusion of the eyes, frontal headache, and eruption on the skin surface; precisely such as follow spontaneously the taking of arsenic in large toxical doses by persons systematically proving its effects. Two drops of the Fowler's solution contain only the sixtieth part of a grain of arsenious acid, and are therefore a safe and harmless dose of the drug.

For gouty or rheumatic patients, with whom intestinal disturbance is apt to occur on the access of influenza, and who are liable to congestion of the lungs by reason of gouty elements in the blood, oranges are highly commended on excellent authority during the feverish stage of the epidemic. It is remarkable and amusing to notice how quickly the street hucksters of this fruit have availed themselves of the medical commendation just now bestowed on oranges as helping to cure influenza. Their barrows, laden with the fruit at cheap prices, abound in those busy thoroughfares which are specially frequented for street marketing purposes by the populace, each barrow bearing a placard printed in large type, and displaying the copy of a letter from Sir de Lacy Evans, extolling oranges, *when taken by the dozen*, because of the citrate of potash furnished by their juice. This prevents the blood from becoming too fibrinous, and thus leading to pneumonia. The curative virtues of oranges in this respect are stated to have been widely proved by Dr. de Lacy Evans in a similar epidemic which arose on the swamps of the Niger. They are therefore now a "safe, easy, and real cure!!"

For patients with whom, as the epidemic attack proceeds, signs of bronchial complications arise, and for whose use under such circumstances hot poultices of linseed-meal, with or without mustard, have been already advised, friction of the chest with some stimulating liniment will be desirable after the poultices have been discontinued. Nothing better for this purpose can be readily had than the "ammonia liniment," ordered by the British Pharmaeopœia, and kept by all druggists. It contains one part of liquid ammonia with three parts of olive oil, in the shape of a semi-solid cream. Some of this liniment should be rubbed, for the relief of bronchial roughness, and cough, and soreness within the upper air-passages, for three or four minutes, every four or every six hours into the chest, over the upper breast-bone in front, and beneath the collar-bones, whilst a piece of flannel on which some of this liniment has been smeared may be worn over the same region between the times of rubbing it in. The beneficial effects of ammoniacal exhalations against bronchial disease have been abundantly proved by the freedom from this infirmity enjoyed by sojourners in stables, and by labourers working amongst guano. On which principle, in a lesser way, it has been found useful to obviate a disposition to bronchitis by wearing round the neck, beneath the clothing in front, a small satchel filled with carbonate of ammonia, which is renewed from time to time as its aroma becomes expended.

Patients affected with influenza should be admonished to avoid putting themselves in immediate contact with others liable to contract the malady, particularly as regards old and weak persons. An admirable means for keeping the air of the patient's room free from infective organisms, or contagious bacteria (supposing these to probably exist), will be, in addition to using the eucalyptol, to constantly burn cresolene in a small vaporiser designed for this purpose by Page, and which may be had from Messrs. Allen and Hanbury of Plough Court. The cresolene, whereof some fumes may be thus continuously and pleasantly generated in the chamber, is a product of coal-tar, which is highly destructive to all low forms of life, and is a capital disinfectant against all septic disease conveyed in the air. The lamp may be kept burning in the patient's room both by day and by night throughout the first three or four days of the illness. Terebene is employed just now in one of our large metropolitan hospitals for a like purpose; and menthol or the vapour of peppermint in another.

When much thirst accompanies the initial fever of influenza, a very useful lemonade of specific value for this particular exigency may be made with powdered nitre (or nitrate of potash) largely diluted with cold water, which has been boiled and filtered. From one to two small teaspoonfuls of this nitre powder dissolved in three half pints of water, and with a slice or two of fresh lemon added, may be taken by an adult patient during the twenty-four hours. It will lessen the feverish tumult, and will gently becalm the system. But, furthermore, this salt has been found, when taken in poisonous quantities, to particularly irritate the respiratory mucous membrane, so that its very modified use is well calculated to relieve any such irritation when arising as a condition of disease. The value of nitre paper in relieving asthma on this principle is undoubted, and is generally recognised.

The maintenance of strength, and the recruital of those vital energies which the virus of influenza always strangely lowers, are objects to be considered of paramount importance in the treatment of each case, even the most simple. And these essential points demand special attention for patients who are weakly beforehand, as well as for the aged and feeble. Therefore some suggestions about the most appropriate forms of light, concentrated, generous support for such patients will not be out of place.

Dr. T. King Chambers, in his admirable *Manual of Diet in Health and Disease,* has shrewdly taught that during any acute fever it is not the doctor's business to arrest its course, any more than it is incumbent on him to try and stay the rising tide. He must only take care it does not swamp the boat; and the safest way to manage this is to keep the vessel as sound as possible. The great art of properly nourishing a patient in fever consists in giving a frequent, almost continuous supply of liquid nutriment which contains very soluble aliments in a dilute form. The chief aim should be to replace in a quick and effective manner the nitrogenous solids which are being rapidly wasted by the feverish heat. But substantial animal food is not available for this immediate purpose, and would be neither tolerated nor digested. Milk, such as babies most easily assimilate, forms the best nourishment for the feeble visceral powers of a patient during the fever of influenza; and, so as to prevent this milk from forming heavy clots under the action of gastric juice in the stomach, it should be mixed with an equal quantity of barley-water, or of soda-water, as the patient may prefer. About a claret-glassful of this diluted milk may be given every two or three hours.

To prepare the barley-water, put two good teaspoonfuls of washed pearl barley with a pint of cold water into a saucepan, then boil this down slowly to two-thirds; and strain.

Weak animal broths, as of chicken, veal, or lean mutton, may also be given in small quantities at a time, intermediately between the allowances of diluted milk. And buttermilk, even if sour, is by no means to be despised as a food at such times. Eggs also are highly nutritious; and when taken raw with water they are quickly absorbed; but if, perchance, the stomach refuses to assimilate them, then they undergo decomposition instead of digestion, and they evolve products which are particularly injurious. Dr. Chambers counsels delay in giving eggs until a measure of convalescence has restored its digestive faculties to the stomach. Dr. Burney Yeo, of King's College Hospital, recommends that an egg should be whipped up with twice its volume of boiling water, added slowly, and then strained, so that a liquid is thus obtained which holds in suspension a considerable quantity of albumen separated into fine particles, and therefore more likely to be acceptable to the incapacitated stomach. The egg treated thus may be added to whey, or to weak broth; or it may be taken by itself in a diluted form with more water.

Whey can be pleasantly prepared as a suitable drink by boiling a pint of milk with three teaspoonfuls of lemon juice, and straining it through muslin, after having first broken up the curd so that the finest particles of casein may pass into the whey.

Vegetable juices may be added to the light broths by boiling therein some succulent garden produce, and savoury herbs; thus enhancing by their mineral salts the value of this diluted animal sustenance. Presently, of course, as convalescence advances, after the temperature has returned to its normal state, light animal foods may be resumed, such as white fish, fowl, game (not long kept), and mutton. Gruel made with fine oatmeal and well strained, or with barley, furnishes an excellent subsidiary article of nutriment.

With respect to beef-tea as affording a high order of nourishment, sufficient of itself to quickly repair the wasted bodily solids in fever, some disparagement has of late been thrown on this favourite resource of doctors and nurses. It is said to neither economise carbon for our temperature, nor to replace nitrogen for the repair of our tissues. Furthermore, certain of its flesh elements held in solution are so nearly allied to similar products of waste eliminated in the urine, that their value is very questionable, and their odour suggestively repellent. Therefore, it is alleged, certain saline matters, plus hot water, are left to play the most considerable, if not the only *rôle* in the value of beef-tea. Taking which several facts into consideration, a substitute for beef-tea is offered in the form of crushed beef, or minced raw meat, such as was first suggested by Trousseau; it being known likewise, on the authority of Kühne, that while the intestinal juice will not act on boiled albumen, or fibrine, unless these matters have been subjected to pancreatic digestion, it will readily dissolve raw albumen and raw fibrine. For fluid beef, take a pound of meat newly killed, and add to it four wine-glassfuls of soft water, with four or six drops of undiluted hydrochloric acid, and with a saltspoonful of salt; then stir well together. After three hours throw the whole into a conical hair-sieve; and let the fluid pass through without pressure. Also pour slowly another wine-glassful of soft pure water on what is remaining in the sieve; and let it run through, while squeezing the meat. The resulting fluid has a red colour, and the taste of soup. A wine-glassful of this may be taken at a time.

Dr. Lauder Brunton asks, "May not beef-tea very often be actually injurious, because the products of muscular waste which constitute the chief portion of beef-tea, or beef essence, are likely to occur as peptones, which by passing directly into the general circulation will act as poisons?" Experiments made on dogs have shown the remarkable result that these animals die sooner when fed exclusively on Liebig's extract of meat than when left unfed.

Then, as to the question of giving alcohol in some appropriate form to patients who are passing through an attack of influenza, as a rule it may be best withheld until the temperature returns to the normal degree; and it should then be judiciously administered. But this axiom is not to be regarded as of invariable applicability. Dr. Chambers has justly said, "The use of alcohol in fever should be regulated both by the temperature and by the condition of the nervous system. If the heat of the blood, as measured in the armpit, rises above 103° generally, and above 105° always, there is then a necessity for wine. And it should be continued till such time as the temperature remains as low as 101°, for twenty-four hours together." Again, if there is a sharp, weak, unequal pulse, with an aspect of prostration, the respiration being of a quivering kind, and the hands tremulous, it is then evident that the faltering nervous system requires some alcoholic support. The quantity and frequency of its doses should be regulated by the effects produced in diminishing the excessive temperature, and in steadying the nervous forces. When a speedy restorative effect is desired, brandy should be given, or champagne; or to old and feeble patients hot negus of port wine, or hot whisky-punch. When a steadier and more continuous stimulation is desired, sound port wine, or Burgundy, should be given, in moderate allowance, at stated intervals of three, four, or six hours, as the circumstances of the individual case may be thought to require.

Arrowroot with brandy constitutes a useful combination of food for maintaining the vital warmth, and for sustaining the vital forces at times, between the nitrogenous supplies. Coffee, also, made from freshly ground and newly roasted berries, with some cream added, will be found a helpful restorative to the nervous and circulatory systems, provided that much nervous excitability and wakefulness are not prohibitive of this stimulant.

Before concluding the present little treatise about influenza I am induced to revert to the grave complication of pneumonia, or inflammation of the lungs, which not seldom supervenes in the cases of weakly or aged patients, as well as in those who are the subjects at the same time of some other illness or infirmity. And a still more serious complication occurs when broncho-pneumonia comes insidiously on, it may be during the early days of supposed convalescence when the patient's strength proves unequal to recuperative efforts, and when some little indiscretion has been perhaps permitted by way of leaving the bed, or coming downstairs too soon. Broncho-pneumonia, as the double word serves to explain itself, signifies a strengthless inflammation of the bronchial tubes both large and small as well as of the lung tissues proper.

I have already said that medical advice and close supervision of the patient must of course be indispensably secured as soon as the earliest symptoms of difficult breathing, or of embarrassed air-passages in the throat, windpipe, and upper chest begin to be felt, whilst the general strength is feeble or faltering. Nevertheless, seeing that during the recent epidemic of influenza, both abroad and in this country, several illustrious persons have notably fallen victims to broncho-pneumonia, as their illness was reaching its second or third stage, and that in by no means a small percentage of cases among the general community of influenza patients either pneumonia or broncho-pneumonia has presently supervened, I am induced to dwell somewhat at large upon the symptoms and treatment of these grave complications.

About bronchitis I have entered already into explanatory details, particularly as concerning bronchitic congestion, and angry soreness of lining membranes extending to the small terminal bronchial air-tubes and their surrounding blood-vessels; a condition which doctors term capillary bronchitis.

When this threatening mischief begins to reveal itself early in the illness, its indications are more acute than when it creeps on in a more subtle way as the attack subsides, but leaving the patient deplorably bankrupt in strength.

Besides the acute symptoms which have been particularised by me some pages back as characterising bronchitis, when immediately following the first febrile access of the illness, the breathing will become still quicker and shorter as the inflammatory action spreads on to the lungs themselves. It will now be found that the number of respirations (which may be readily counted as the chest is seen to expand and contract for each respiration) average from 30 to 40 in a minute; whereas in health their usual number is from 18 to 20. The cheeks now become flushed, and the lips are purple in colour. The chest is felt to be constricted and sore rather than painful; the cough, though frequent and harassing, is not severe; the expectoration is for a while scanty and sticky, and of a yellowish white character; but later on it becomes more copious, and of a greenish yellow colour, whilst thick and semi-solid, and occasionally streaked with blood. The pulse remains very small and feeble and quick, being readily extinguished under the pressure of the finger at the wrist, and beating from 120 to 140 times in a minute. The skin is moist and often clammy, whilst the hands and feet are cool. There is considerable headache, with some measure of delirium especially in the night.

If this seriously complicated state becomes yet more aggravated, the patient can no longer breathe whilst lying down; but has to be propped upright in bed, or to lean forwards in a sitting posture, resting on the arms and the elbows. The aspect of the face and hands becomes dusky and livid; whilst the cough is more frequent and the respiration still more laboured. The pulse finally becomes very quick and thready and uncertain, with many intermissions. At the same time the whole body becomes bathed in cold perspiration. Delirium is now more constant, and complete unconsciousness is very likely to creep on. At last, as the strength continues to fail, the cough declines, the expectoration ceases, and then the flame of life flickers to its end, and the patient sinks through extreme vital prostration.

But if, through the remedial measures which are energetically employed from the beginning of this complication, and from the well-chosen medicines and the generous support administered, a happier issue is brought about, this is evidenced before long by a lessening of the bronchial irritation and by an amendment in the respiration as regards both its quickness and its freedom of action. The pulse gradually becomes slower, and at the same time gains in power; the expectoration contains more air within its bubbles and is more copious; the cough is looser and less frequent. Now the appearance of the face is more natural of colour, and without anxiety of expression. Slowly and surely (though with lesser returns at times of difficult breathing and of cough) convalescence becomes established, and the patient may be looked upon as out of danger, except with regard to his liability for one, two, or three weeks to a relapse, and on the assumption of his continued ability to take liberal support throughout a protracted time of complete recovery after all active pulmonary symptoms have subsided.

As concerning the line of treatment to be adopted for these pulmonary complications, ensuing either early in the illness or after the first stages of influenza have been surmounted, this must be in the main stimulating and supporting, whilst all depressing measures should be uncompromisingly discountenanced. Generous sustenance from the beginning, and the exhibition of suitable alcoholic stimulants early in the fray, will certainly be the leading features of treatment at the hands of an intelligent and observant physician. Soothing or counter-irritating applications to the walls of the chest, both before and behind, will be made use of according to the requirements of the particular case under notice. Everything restorative and revivifying and preventive of bodily exhaustion which thoughtful skill can devise or progressive knowledge can suggest will be brought to bear promptly and practically for the full welfare of the patient.

The medicines which commend themselves to my mind as best for those particular complications which I have now been considering are, at first, the green hellebore tincture, or the aconite tincture, either of these being alternated with ammonia, as explained in a previous page. And these medicaments should be continued until the febrile temperature has sunk to the normal degree. But immediately any signs of broncho-pneumonia begin to show themselves, then tartar emetic becomes a medicine of the highest remedial value. Not that this drug is to be administered in the customary doses or after the usual fashion so as to nauseate, or to enfeeble the circulation, or to lower the tone of the system at large. It is just because tartar emetic, when given in toxical doses, produces these several adverse symptoms and conditions, that I would now choose to give it, in very small quantities on a fixed principle, for the purpose of opposing and reversing a similar combination of associated grave symptoms which have arisen through the assaults of the influenza miasm.

The antimonial wine of ordinary pharmacy is a ready and convenient form in which tartar emetic may be administered. This preparation contains two grains of tartarised antimony in each ounce of the wine. It has been and still is the practice of many physicians to give ten, fifteen, or twenty drops of antimonial wine, with a view to induce sickness and a reduction of the pulse in force and volume, with more copious expectoration, and with a general relaxation of muscular and nervous tone.

Towards obviating these very conditions which are already morbidly present in a threatening and serious way, I would select this medicine, but would give it in doses of only three or four drops, with a table-spoonful of water, to an adult (instead of the aconite or the hellebore) every two, three, or four hours, according to the urgency of the symptoms, and still in alternation with the ammonia. Dr. Ringer, Professor of Materia Medica at the London University, advises tartar emetic in doses each containing one-eightieth part of a grain for children suffering from bronchitic asthma; and this dose will be represented by three drops of the antimonial wine.

Next, when the indications begin to be those of pneumonia combined with the bronchitis—that is, when the respirations become more hurried, and the lung sounds as discovered by the stethoscope denote impeded circulation in these organs to the extent of threatened or incipient consolidation, whilst the strength of the patient is certainly diminishing—under these critical symptoms the medicinal use of phosphorus would command my confident and unhesitating reliance. This substance is soluble only in ether, though it is miscible with olive oil, and is sometimes given in that objectionable form. The spirituous ether takes up into solution exactly one per cent of the drug. If one part of this ethereal solution of phosphorus be subsequently mixed with nine parts of rectified spirit of wine, a tincture of phosphorus becomes thus prepared of a fixed strength, and conveniently useful for practical purposes of administration. When taken in poisonous quantities for self-destruction, or when purposely swallowed by provers for the purpose of watching its effects in toxical doses, phosphorus has been found to "hepatise" the lung tissues through active inflammatory congestion; that is, to make their usually spongy structure through which air ought to freely permeate, as solid and inelastic as is the substance of the liver.

Very marked signs of irritative congestion have simultaneously occurred with these provers in the mucous linings of the windpipe, and of the bronchial air-passages. Much prostration of strength has also accompanied these pulmonary phenomena. If given continuously in material doses for some considerable while, phosphorus impairs the vitality of the nervous centres, and brings about a state of paralysis. Thus its main toxical effects in harmful quantities are direct mischievously congestive irritation of the lung structures, and positive impairment of the general nervous vitality. Hence, it is theoretically assumed and abundantly proved in successful practice that phosphorus acts most beneficially and curatively when these same serious physical complications have arisen from spontaneous disease, or in the course of an influenza epidemic, as broncho-pneumonia. From three to four drops of the phosphorus-tincture which I have formulated should be given as a dose, with a tablespoonful of cold water, to an adult every two or three hours, either by itself or in alternation with the antimonial wine, immediately those pneumonic symptoms commence which I have categorically defined. The tincture of phosphorus should be kept well corked and in a dark cool place.

In the event of its seeming desirable to give both the phosphorus-tincture for the pneumonia and the antimonial wine for the bronchial irritability with feeble pulse and faltering circulatory powers, whilst ammonia is likewise indicated as a restorative stimulant, then either the phosphorus dose or the antimonial dose may be administered in conjunction with the ammonia mixed with infusion of tonic serpentary as prescribed before, when the alternate turn for these last-named mixed medicines arrives.

The instructions already given about hot poultices or the compress, with inhalations, and with the steam-kettle in the room if the atmospheric temperature is at the time keen, dry, and irritating, are to be closely pursued; also the liberal supplies of restorative nourishment, and of stimulants, as they are pronounced needful, more or less often, and in large or smaller quantities, should be unremittingly kept up.

It is needless to add that the patient should be watched carefully throughout each night until all acute or serious symptoms are overpast; both because of frequently required ministrations, and to guard sedulously against any comparatively sudden or unlooked-for collapse of the strength.

In summing up the incidental facts which have been ascertained, and the conclusions which have been formed by medical men during the recent epidemic of influenza, it may be affirmed that a special miasm of a malarious sort seems to underlie the malady as its primary cause; that this swiftly extends over wide regions, whilst doing some morbid violence to the vital nervous centres of many inhabitants of these regions; that in all probability certain micro-organisms of a specific kind are meanwhile generated concurrently with the course of the disease, and may be found in the expectoration of the sufferers; that these micro-organisms engender poisonous products which make the epidemic much more infectious, and transmissible from person to person; that the intimate structures of the spinal cord, and of the medulla which connects it with the brain, are particularly shocked, as shown by the immediate prostration, with headache, giddiness, unsteady gait, and remarkable aching of the limbs; and that the integrity of the blood is for the moment profoundly impaired, whilst the spleen is liable to temporary enlargement.

Also it is unanimously pronounced that convalescence is but slowly effected; and that for one or two weeks after the first febrile storm there is a tendency to strengthless congestions of the lungs and of the bronchial air-passages. By a skilled colleague I have been shown a well defined group of the distinctive microbes which are found in the expectoration of influenza patients; and to the presence of which, as is thought by some, the bronchial congestions are due.

Again, it is widely shown that the attack of influenza differs specifically from a common catarrh, in the suddenness of its onset; in the accompanying prostration of strength exceeding the amount of preliminary fever beyond all ordinary relative proportion between these; in the absence of copious defluxions from the head by the nasal passages; in the tardiness of convalescence; and in the liability to a serious relapse at the end of a week or ten days. Some cases, moreover, are additionally signalised by considerable gastric disturbance, or by an eruptive outbreak in brightly coloured patches over the body and the limbs, or by inflamed eyes, enduring headache, and severe orbital neuralgia.

Again, the conditions of infection associated with the epidemic appear singularly uncertain, and difficult to be defined. In some households the malady is first introduced by one member, and spreads methodically to the other members after the usual manner of an infectious disease, and with an incubation of about three days. In others it behaves with unaccountable caprice; as, for example, in one of the smaller London hospitals where its progress could be accurately watched. Here certain patients were received lately during the spread of the epidemic, and were placed in main wards on both the male and the female sides of the house, wherein other patients ill from various distinct ailments were already lying. And up to this time no person in the hospital had been attacked by influenza. But presently several inmates of the hospital in other wards and in the domestic departments were assailed by the epidemic, though not one of the patients who were already occupants of the influenza wards when the sufferers from the ailment became their companions was victimised by the malady, either sooner or later.

Likewise, in a certain large family free hitherto from influenza one of the members pays a visit to a house in which she unexpectedly encounters a friend sick of the malady. This member returns home straightway; and on the following morning is taken ill with the epidemic, together with four other members of the family, all simultaneously.

As a point of practical importance in the ultimate treatment of patients towards completing their final cure, the medicinal employment of phosphoric acid as a tonic has been found particularly useful. The dilute form of the acid is chosen, such as every druggist is able to supply; and from five to ten drops of this are given to an adult two or three times in a day, according to the individual requirements of the case, with half a wine-glassful of cold water, or of bitter infusion of orange peel. Half, or a third of the same quantity may be administered to a child, as adapted to its age; and the dose may be rendered more palatable by adding thereto a little syrup of orange peel.

Having paid such prolonged attention to the subject of influenza in its practical bearings, I will conclude my small treatise concerning this epidemic by summarising the recent theories and suggestions which have been propounded and offered during its current course by leading physicians and scientists. It is supposed that there continually exists at a high atmospheric altitude over most territories an expanse of organic dust infinitely small as to its particles, and kept from descending by the winds and currents always in active movement between it and the earth. This dust-cloud contains morbific germs which generate epidemic disease if they elude the currents and reach the ground, thus coming into contact with the mucous surfaces of animate beings, and finding there a nidus for further development. Just such a chain of events as is here imagined has in all probability become realised during the autumn of last year and the early winter, through a long spell of widespread atmospheric calm and comparatively high temperature. And thus it has happened that a vast area of infective miasm has visited whole regions of the earth almost simultaneously as a strange irresistible epidemic of feverish catarrh, leading in severe cases to bronchitis and broncho-pneumonia. Moreover, in addition to this common source of infection over a district, it has been found that each ailing individual immediately transmits a personal contagion to others with whom he is placed in apposition; and hence it is to be justly supposed that widely prevailing high winds, especially if coupled with keen dry frosts, will avail more than any hygienic measures which lie within our very limited control to disperse and terminate these insalubrious atmospheric combinations.

In Vienna it is confidently announced that the special microbes which characterise influenza have been discovered and demonstrated, these being almost identical with the micrococci which distinguish croupous inflammation of the lungs. In this country microscopists have likewise discerned a particular micro-organism in the expectoration of patients under influenza; but they hesitate to say whether this is the cause or the result of the malady. Anyhow, it is known that all such microbes live on the oxygen of the blood, which they thus mischievously impoverish; and the lesson to be learnt from this knowledge is how vitally important towards resisting epidemic influences it is to get abundant fresh air, outdoor recreative exercise, and good food. But tobacco and alcoholic stimulants will rather predispose persons who are otherwise healthy to become victimised by the epidemic.

Again, it is conjectured that the morbific germs find a lodgment particularly on the lining membranes of the eyes around the eyeball and beneath the lids. For which reason Dr. Besley Thomas ingeniously proposes to wash the eyes thoroughly once or twice a day with a harmless but protective lotion made with boracic acid and water. If the morbid particles fall on the tongue and are swallowed, they remain inert; but the rough posterior throat, especially if liable to ordinary soreness, is singularly receptive of these noxious particles, which immediately become absorbed into the system through the tonsils. Some doctors who have attended many patients in the present epidemic think they have detected a peculiar smell associated with the disease—just as there is known to be a distinctive odour of measles and of smallpox, as well as the sour exhalation inseparable from rheumatic fever. Again, the epidemic catarrh is signalised also by a marked absence of the fluent running from nose and eyes which sets in with ordinary catarrh; and the early bronchial cough of influenza is strangely tight, dry, and constrictive. When the attack reaches its later stages, and when the strength of the patient is sufficiently recovered to permit safe removal, a change to a high, dry, mountainous locality where ozone abounds, or to a dry bracing part of the coast for the same reason, is to be strongly commended. The abundant and specialised oxygen thus obtained will destroy any lurking micro-organisms which may be retarding the patient's recovery. It has been found that persons of a gouty disposition tolerate the epidemic less easily than others who have no such constitutional bias; and the moral to be deduced from this fact by patients liable to gout or rheumatism, is, that whilst maintaining their strength with liberal support they must temper generosity with discretion.

PART II

COMMON COLDS

IN

THE HEAD AND CHEST; HOW BEST TO MEET AND TREAT THEM

> "*Beatrice.* I am stuffed, cousin; I cannot smell.
>
> "*Margaret.* A maid, and stuffed! there's goodly catching of cold. . . . Get you some of this distilled Carduus Benedictus, and lay it to your heart: it is the only thing for a qualm."
>
> *Much Ado About Nothing*, Act III. Scene iv.

PART II

COMMON COLDS IN THE HEAD AND CHEST

In contradistinction to epidemic catarrh, or influenza, which spreads rapidly from district to district and is certainly infectious, a common catarrh besets only one individual at a time as the casual effect of a draught or chill, and is not transmitted from person to person. But whilst saying this, I must exclude from the range of common colds that ordinary form of simple influenza which constantly befalls us under certain disturbed states of the atmosphere, particularly in the winter months; and which generally runs through the house, from the harmless necessary cat to the lady and lord of the mansion.

The common cold proper is due to checked action of the skin, or to a climatic shock sustained by the animal nervous centres, through exposure to raw chilling air or to a biting east wind, or by lying in damp sheets, or getting wet feet. To understand the rationale of this ailment we must remember that there is an unbroken chain of nervous connections extending from the outer skin surface of the whole body to the spinal cord, and from thence to all the central organs of life within the frame. Nerves of conduction pass from every part of the outer skin to the spinal marrow contained in the backbone; and other nerves of a similar sort branch out from the spinal marrow to all the chief organs within the body; so that it is easy to understand how an arrest by cold or damp of the functions which devolve on the skin will express itself by general fever due to a shocked spine, and by a further derangement of all the internal bodily functions through impeded nervous supplies from the spine. In like manner a check sustained by the inner skin—that is, by the membranous lining of the nostrils, the throat, the bronchial tubes, and the lungs—will be morbidly felt by the spinal cord as the main source of animal nerves to these parts, and by all the large internal organs of the body over which the spinal nerves also exercise control.

Otherwise a common cold in the head or chest is but seldom considered a serious illness, and is generally entrusted to domestic treatment for its cure.

The traditional mustard footbath, with onion broth or a treacle posset, and a dose of sweet nitre at bedtime, whilst not forgetting in good old fashion to tallow the nose, chiefly constitute the remedial course approved for restoring the sufferer. Nevertheless it sometimes happens that these homely measures will fail to meet the emergency; and a common cold may become a serious matter. "To despise your enemy," said a famous soldier, "is a capital blunder in warfare;" and so in the battle of life it behoves us to remember that a slight shiver or a trifling cough may run on to acute disease; and that the regiment of symptoms which gathers in force as organ after organ becomes involved may prove at length an unconquerable army and may overpower the strength of the patient's resistance. "Consider," it is said in the *Diary of a Late Physician*, "a slight cold to be in the nature of a chill caught by sudden contact with your grave; or as occasioned by the damp fingers of death laid on you to mark you HIS. . . . And let this be remembered as having the force of gospel truth by all who are conscious of any constitutional flaw, who are distinguished by long necks, narrow chicken chests, and exquisite sympathy with atmospheric variations, that to neglect a slight cold is to trifle incontestably with the tomb."

But these are doleful ways of regarding an affection which, though sufficiently distressing, is seldom dangerous; and which, by its sneezings and moppings and mucous defluxions from the nose, or by its hawkings and spittings from the chest, makes the victim a cause of personal annoyance to others rather than a subject for commiseration and helpful pity shown towards himself. Moreover, the common cold in the head and chest is a true British endowment—a possession of the sons of the soil. It closely resembles that gallant able-bodied seaman of Her Majesty's ship *Pinafore*, who might have been a Roossian, a Frenchman, or a Proossian, "but who WAS *an Englishman!*" So it is with our insular catarrh, which is strictly of home produce, and British to the backbone!

Epidemics of influenza may hail from the Steppes of Siberia, and after traversing the wide dominions of Germany and Prussia, may come through France to our shores. But the true cold in the head, with its run upon pocket-handkerchiefs and with its constrained use of the b's and d's and t's in our common talk, is before all things English, and to the manor born. The catarrhal epidemic from remote lands comes like a shadow, and so departs. But our British infirmity dwells at our doors; it resembles the poor, and is always with us. This being the case, it may fairly be held that the subject of a common cold deserves some deliberate and thoughtful consideration at the hands of English readers; and I therefore proceed to devote what attention I can to its claims.

The general cause of such a cold is a chill sustained by the skin, or attacking the nose and throat, from some vicissitude of our climate, or from some injudicious exposure to harmful cold and wet. "He that sits," says an old proverb, "with his back to a draught, sits with his face to a coffin." And it may be added he that encounters a keen wind when he is hot or tired, and passively perspiring, stands not far from the churchyard; whilst wet clothes or an open window or the lack of an overcoat on a sharp blustering day may serve to dig a grave for the strongest man, who is sure to be vulnerable at some point, as Achilles was in his heel. Shortly after the noxious exposure to damp, cold, or to wet, the attack commences with sneezing, more or less violently, together with a general sense of shivering, and a chilliness down the back; whilst presently the forehead begins to feel heavy, and the throat to be stiff, with a smarting dryness in the nostrils, and with some general aching in all parts of the body. One nostril is often affected first, with pain and heaviness in the orbit and temple on the same side of the head; and after a short time there is a flow of acrid tears down this nostril which seem to excoriate as they fall, and to form dry incrustations at the outlet. The other nostril is soon affected in like manner, and discharges the same sort of thin acrid fluid, with watering of the eyes and increased weight in the forehead, whilst spinal shivering persists, and a disinclination is felt to any bodily or mental effort. The medical term coryza (from the Greek *coruza*, a running) is applied to the copious discharge which takes place in this way from the nostrils, with lachrymation from the eyes, on the access of a cold in the head.

Very soon in the attack there is some vocal hoarseness, with a dry soreness of the swallowing throat, and often with a short tickling cough proceeding as yet from quite the uppermost air-passages. Unless the condition of acute chill which has declared itself by this train of early symptoms can be successfully combated at first, some feverish heat of the whole body soon ensues, after some four or six hours, with a dry skin and a marked increase of general bodily discomfort.

The discharge from the nostrils now becomes of a thicker mucous sort, with increased soreness of the throat, and with a tight dry wheezing about the upper chest. From the first the appetite fails, with impairment of taste and smell. During the early shivering stage hot liquids are desired; but as soon as the feverish heat begins to follow, a thirst for cooling drinks is speedily and eagerly felt.

The bodily temperature is now found to rise by one or two degrees, whilst the pulse is quickened and the tongue furred. The urine is scanty in quantity and of a deeper colour than in health.

The mouth and lips seem raw and dry; the windpipe and throat being tender and sore if pressure is applied over them from without. When the cumulative symptoms have reached this point some active treatment will be needed to bring about a prompt subdual of the fever and of the nervous tumult; but the prior pursuance of simple means should have sufficed to effectually prevent this contingency. At the very beginning of a threatened catarrh from chill, while as yet only a disposition to shiver is felt, with sneezing, and a lack altogether of vital bodily warmth, the impending illness may sometimes be entirely averted by a brisk run in the open air until the checked circulation is stimulated into renewed activity by this vigorous exercise, and the arrested functions of the skin are likewise reanimated.

Nature teaches a lesson which has the same salutary aim in view when she incites sneezing as a first warning of catarrh.

This spasmodic impulse, whether occurring singly, or in a series of explosive efforts, not only tends to throw off whatever irritant may have obtruded itself on the sensitive lining membranes of the nasal passages, but it powerfully quickens and exalts the whole circulation of blood by the deep inspiration and the violent expiration of which each sneezing action consists. And it thereby happens not uncommonly that the same restored activity of vascular current throughout the skin is brought about which the brisk exercise just commended is intended to compass. Or, under the same conditions of early shivering and chilliness and bodily depression, if a hot bath is taken immediately, and the patient goes straightway to bed, whilst something by way of a stimulating warm drink is swallowed to promote perspiration, it is more than probable that no further symptoms of the threatened catarrh will be felt on the following morning. And, indeed, when the same premonitory sensations are realised, but in a lesser degree, it may suffice to dispel them by a hot footbath, with or without mustard, at bedtime, and a jorum of gruel, or of onion-broth, as a nightcap to promote sweating. But in the event of these preliminary measures having been neglected, then the catarrhal attack will pass on from the first shivering passive stage to that of some febrile heat and excitement, through the shock communicated from the skin, or from the offended mucous passages of the nose and throat, to the large animal nervous centres of the spinal cord and lower brain.

And now hot treatment, whether as applied to the outer skin or to the inner mucous membranes, will no longer be proper or helpful. By this time the temperature, as ascertained by the medical thermometer, will have begun to rise, and the nasal passages will be no longer dry, but will be secreting their acrid humour with excoriating activity. So that now the symptoms may be best met, and the comfort of the patient promoted, by cold wet packing with towels, or with a wet sheet for from twenty to forty minutes or an hour, according to the rapidity with which the warming in this pack takes place. The question whether wet towels or a wet sheet should be used must be determined by the degree of fever which is present, and by the existing state of health of the patient, whether it be vigorous and full or delicate and feeble just now, independently of the present catarrhal illness.

If the body is full blooded, and the pulse strong, whilst the temperature is not higher than 104°, the sheet packing may be best employed; but if an opposite state of physical conditions obtains with the patient, then the cold wet-towel packing should be forthwith put into operation, and precisely after the manner which I have already detailed in Part I. of this treatise. Or in case there are true grounds for doubting if the patient is strong enough to benefit properly even by the cold wet-towel packing, then a still more restricted application of cold may be made by putting on the wet compress over the bowels. This compress should be refreshed again and again out of cold water at intervals of two or three hours, until the feverish heat has been subdued and the general nervous disquietude allayed. By most persons who inherit traditional prejudices against using cold water to the skin in sickness, and particularly when a catarrh has been caught, my commendation of these packing processes will be received with hesitation or disfavour. But any one more enlightened as to their value and perfect safety will feel no hesitation in adopting measures of this kind, which, when judiciously employed, never fail to afford prompt benefit and are never followed by a single untoward symptom. On this point I quote the powerful words of a great and long-practised hydropathic teacher as to cold wet packing for active inflammation of the lungs, which is a far more serious illness than any attack of common catarrh, however severe. Dr. Gully thus relates his convictions and experience: "I know of no acute disease in which water-treatment is more effectual and safe; yet there is none in which persons who are ignorant dread its application more. I have used packing as recited above in children of one year old, and in persons of sixty years, and at intervening ages, and I never knew it fail to subdue the acuteness of the inflammation and cause it to disappear altogether, or to subside into a more passive and chronic condition. But the fever and inflammation must be treated vigorously, and without fear of 'cold wet things' to the skin, bugaboos which total want of knowledge and experience conjure up: these wet things cannot do half the harm that mischievous drugs work every day; and when the wet applications have eased the chest they do not punish the stomach for weeks or months afterwards with some form of indigestion as would the physic." One fact, however, must be recorded, that packing of the chest proper, or of the parts contained within the ribs, reduces the febrile excitement of a patient in a fourth of the time which the wet compress over the belly would require to produce the same effect. The former would need to be stopped much sooner than the latter. This is in parallel with the ascertained fact that half a dozen leeches applied over the ribs lower all the vital powers as much as twenty would do if applied over the bowels. If then it be concluded, with respect to the patient immediately in hand, that the febrile heat is so high in degree as to require sheet packing, and that this patient is sufficiently well supplied with blood and vitality to benefit by the process, it should be thus conducted. The sheet selected for use being of linen or cotton fabric, is to be wrung out of cold water more or less thoroughly according to the amount of febrile heat to be subdued, and of reactionary energy with which the patient seems to be endowed. A single or double blanket is then spread over a mattress, and the wet sheet is extended over this. The patient is removed promptly from another bed, or from under the bedclothes with which he has remained covered, and is placed lying on the middle of the wet sheet; one-half of this is then brought closely over the body with the arm and hand of that side either included or left free as the case may determine; which half is tucked in on the opposite side; the other half sheet is also to be brought over in a like manner and tucked under the farther side of the body, with the arm on this side likewise either in or out of the wet sheet. Then (unless the feet are cold and bloodless) the threefold end of the sheet which has now been formed at the bottom of the bed is to doubled securely under both feet placed together. The dry blanket must next be brought closely over, by first one-half and then the other, and each half must be also well tucked under at the opposite side; then the bedclothes or other blankets and woollen articles are to be drawn up over the patient, as many as will secure the ready warming of the wet sheet in which the packed person is enveloped. Under the feverish conditions of a severe catarrh the sheet will usually become thoroughly hot in thirty or thirty-five minutes, at the end of which time the blankets and wet sheet should be removed, and the patient whilst lying on a dry blanket and partly covered should be sponged all over part by part expeditiously with a cold wet sponge, and then rubbed dry with a towel piecemeal, thus treating the upper half of the body and the arms first and clothing them before the lower half of the body and the lower limbs are treated in a similar way. The patient should afterwards remain lying down in bed or on the sofa, and if the temperature should stay comfortably reduced, no further packing will be needed. But if after two, three, or four hours the feverish heat should again assert itself, the process of sheet packing, just as before, followed by cold wet sponging and dry towel rubbing, may be then repeated either once or twice at the requisite intervals until all febrile heat and excitement have been pacified and subdued. If the patient is thirsty or with a dry parched mouth and sticky throat during the sheet packing, a tumbler of cold water may be taken by mouthfuls from time to time.

Such is the somewhat energetic and decided treatment which an attack of catarrh should receive when its symptoms are severe and its whole character of the inflammatory sort. In which event, as I have endeavoured to explain, the kind of packing should be adapted to the vitality of the patient and to the exigencies of the cases; whether this packing shall be entirely with a wet sheet or only of the body partially with wet and dry towels; or still more restrictedly with simply the cold wet compress over the belly, which is to be refreshed from time to time out of cold water as its wet linen becomes thoroughly hot, more or less speedily. But, as a rule, the common cold in the head and chest runs altogether a less acute and feverish course, so that such positive treatment is not called for to reduce feverish heat and to ward off inflammatory dangers. Rest on the sofa in a room at a comfortable temperature, with a steam-kettle on the fire if the weather is cold and frosty, with a dry keen air, whilst some appropriate medicines are given and a light nutritious diet, will steer the patient safely, and in a timely manner, through his inconvenient and disquieting ailment. At the same time the use of some fragrant antiseptic, by inhalation or by its being vaporised in the room occupied by the patient, will be a capital auxiliary in his treatment. For this purpose eucalyptol may be employed, or pine oil, or thymol, or creosote, a teaspoonful of either being evaporated now and again on a hot plate, or kept slowly volatilising by means of the small lamp constructed by Page for this purpose as mentioned in Part I. This inhalant proceeding is now advised, not with the view of annihilating micro-organic germs—to the presence of which the irritated states of the nasal and throat passages are attributed as in an attack of epidemic influenza—it is enjoined rather on the assumption that mucous membranes rendered raw and sore by morbid action begin to secrete harmful matters which require to be at once rendered inert by an antiseptic atmosphere.

On the same principle the modified fumes of burning sulphur, or a spray of sulphurous acid gas about the nostrils and mouth, or the olfaction of iodine from a wide-mouthed bottle well into the nose and throat, will tend to relieve the sore and weeping mucous membranes.

If an attack of catarrh has come on at first with sneezing, and such particular signs of cold in the head as burning dryness of the nostrils and throat, dull heavy headache about the forehead and eyes, and a discharge presently of thin irritating fluid from the nostrils with watering of the eyes, in such a case a tickling cough will shortly ensue, and the morbid state of mucous congestion will travel downwards towards the windpipe and the lungs. The throat soon becomes sore on speaking, and the membranes of the upper chest are felt to be raw and scrapy; the cough also is hard and harsh. Some rise of the bodily temperature is sure to accompany this state of things, and the pulse will become quickened, as well as more or less sharp. There will be a sense of thirst and of general bodily *malaise*. Then the medicine indicated during this stage of the catarrh will be tincture of aconite—four drops of the tincture with two fluid ounces of cold water so as to make six doses; each of one dessertspoonful. In this way half a drop of tincture of aconite will be taken mixed with a dessertspoonful of water, for each dose, and should be repeated every three hours until the skin becomes moist and cooler, whilst the pulse grows softer and less frequent. The sustenance at this time should be of a light sort, chiefly consisting of simple nutritious slops, weak tea, oranges, and toast and water.

When the throat begins to feel dry and sore on speaking, a wet compress should be applied round it, and should be worn constantly for a day or two, having its wet linen, which will be next the skin, refreshed from time time out of cold water; no alcohol is to be allowed whilst this treatment is being pursued.

I may remark here incidentally that the vocal throat is specially affected and uneasy from catarrh, so that in this form of sore throat, with hoarseness and loss of voice, the use of the cold compress around the throat is signally beneficial; but a soreness or inflamed state of the swallowing throat is more commonly associated with derangements of the stomach and of the digestive organs; and these require to be treated by hot fomentations over the pit of the stomach, with other similar measures.

As an initial preventive remedy to which common recourse is now promptly had by many persons directly the onset of a cold in the head or a chill is felt, camphor in the form of strongly medicated pilules has come to take a high place in public esteem. Those medicinal authorities who have investigated the toxical effects of camphor when taken in a poisonous quantity, or when given designedly in such material doses so as to prove their effects, are unanimous in pronouncing the full poisonous symptoms to be those of "vital collapse, with chill"—"the body becomes possessed by shiverings, and the strength sinks."

Furthermore, it has been found that in many cases of poisoning by camphor an immense dilatation of the superficial blood-vessels throughout the skin surface has occurred; which is analogous to the second reactionary stage of catarrh from a general chill, after these superficial vessels have had the blood first violently repelled from them by cold or wet. It would thus seem that the totality of effects produced by camphor when given to excess closely resembles the early stages of a catarrhal cold from a chill; and under these circumstances it may be reasonably concluded that camphor in moderate doses, if taken at the first access of a catarrh before the feverish stage comes on, may altogether abort the attack. But the large and frequently repeated doses of camphor which it has become fashionable to take with this aim overshoot the mark altogether.

Each large camphor pilule as ordinarily sold contains two or three drops of a saturated tincture of the drug, and it is advised not uncommonly that one or more of these large pilules shall be taken every fifteen minutes throughout some hours. If the principle of cutting short a catarrh on the lines which I have elucidated is a correct one, this principle may be better vindicated by giving a tablespoonful of simple camphor water, or from two to three drops of a weaker tincture (such as commonly contains only from one-eighth to one-twelfth of the drug to seven-eighths or eleven-twelfths of spirit) every half hour for a little time until either all the symptoms of the incipient catarrh appear to be dispersed, or until the supervention of the febrile stage shows the futility of the camphor and calls for the more suitable aconite.

Irrespective of the catarrhal depression, it is by no means safe on their own account to take strong pilules saturated with concentrated camphor in a wholesale way. For example, an unfortunate boy at Eton, to whom on leaving home his solicitous mother gave a bottle of these sweet strong camphoraceous boluses for use in case he should be attacked by catarrh, or should take a chill at school, devoured the medicated confectionery with such avidity not long ago that he fell into a state of very dangerous collapse and almost lost his life.

As the first febrile stage of a confirmed catarrhal attack begins to pass off, probably with perspiration and a moister state of the mucous lining of the nose the throat, and the uppermost chest, it is found that the discharges from these surfaces become thicker and more mucous in character, whilst the nostrils are blocked through the swollen and secreting state of their inner surfaces. The same condition has extended likewise along the continuations of the mucous membrane into the hollow sinuses about the forehead and brows, as well as into the tube which leads on each side within the throat to the inner ear, thus causing dull headache and a measure of deafness. At the same time the throat and windpipe and uppermost air-tubes begin to secrete sticky phlegm, so as often to need clearing; and a sense of rawness and soreness accompanies the necessary expulsive efforts to get rid of this phlegm.

As an admirable remedy for this state of things, and to follow the aconite, which may now be discontinued, the white bryony root, in the form of a spirituous tincture made therefrom, will afford prompt and unmistakable relief. This tincture may be readily procured from any good druggist, and is of a uniform strength, so that from four to five drops is a proper dose in a tablespoonful of cold water for an adult, every three or four hours, just as the symptoms may seem to indicate.

It is prepared in this country from the root of the *Bryonia dioica*, or the white bryony of our hedgerows. When taken by medicinal provers for the express purpose of ascertaining its effects in varying doses from the harmless to the poisonous on the human subject, bryony has always unquestionably affected the mucous linings of the upper air-passages; and these parts have been found violently congested in animals poisoned by the plant. "Fluent coryza for eight days," "tough mucus in the fauces, which is loosened by hawking," "hoarseness," and "a hacking dry cough from the upper part of the windpipe," are some of the main symptoms which these provers of bryonia have recorded when the plant has been taken in large toxical doses. So that "after aconite," says Dr. Hughes (in his *Manual of Pharmacodynamics*, or drug powers), "bryonia is the best medicine for a cold on the chest where the nasal catarrh has run down the air-passages as far as the first or even the second division of the bronchial air-tubes." "Heat, soreness, and an irritative cough with tough expectoration make up the bryony picture."

A most excellent medicinal food at this middle stage of catarrh, when taste and appetite begin to return, is the good old-fashioned jorum of hot onion-broth, taken at mid-day or at bedtime. This is often called onion-porridge, and has a great rustic reputation for curing a cold in the head. To make it, peel a large Spanish onion, and divide it into four parts, then put these into a saucepan with half a saltspoonful of salt and two ounces of butter and a pint of cold water. Let them simmer gently until quite tender; then pour all into a bowl which has been made hot; dredge a little pepper over, and let the porridge be eaten as hot as it can be taken. It is best taken at bedtime.

Chemically the bulbs of the common onion contain a particular volatile pungent principle called "allyle," to which they owe their peculiar flavour. Likewise they furnish sulphur, starch, saccharine matter, and phosphorus, together with some alkaline earthy salts. When made into broth or porridge, which by its warmth and its demulcent qualities soothes the sore mucus membranes and promotes perspiration, the onion further exercises special medicinal virtues. Provings have been made of the ordinary red onion (*Allium cepa*), in order to ascertain what these curative virtues really are when pushed to an excessive use,—onions, leeks, and garlic, by reason of their allyle, have been found to induce "melancholy with severe catarrh"; they also "dispose to sopor, lethargy, and even insanity." The common onion in toxical quantities causes "confusion of the head, with coryza," likewise "excessive watering of the eyes after frequent sneezing," and "a copious discharge from the nostrils to an unusual degree," with "pains in the throat extending to the ears," and, in a word, "all the symptoms of a severe cold—frequent sneezings, lachrymation, pains in the forehead, and a hoarse hacking cough."

These being the effects of the common onion when taken in harmful quantities it is easy to understand that when similar morbid symptoms have arisen from other causes, as from an attack of catarrh in the head and chest, modified forms of the onion are likely to act in a beneficial and curative way. On which principle the onion porridge or broth is a philosophical remedy both as food and physic during the progress of a catarrhal attack; and on the same principle a medicinal tincture of the red onion

(*Allium cepa*) is made, and employed for the relief of colds signalised by "fluent coryza, constant sneezing, pain in the back, chills, troublesome bronchial cough, restlessness, and depression of mind."

From thirty to forty drops of this tincture may be given to an adult three or four times in the day in a small wine-glassful of hot water or hot milk.

As an ordinary thing onions when eaten at night, by persons who are not of a feverish habit, promote sleep and easy perspiration. The late Frank Buckland confirmed this statement in his own person. He said: "I am sure the essential oil of onions has soporific powers, and in my own case it never fails; if I am much pressed with work, and feel that I am not disposed to sleep, I eat two or three small onions, and the effect is magical."

Furthermore the use of raw onions with the daily food tends to preserve from infectious diseases. It is related that during an epidemic of fever in Somers Town and St. Giles's, the French priests, who constantly used garlic in all their dishes, visited the worst cases in the dirtiest hovels with complete impunity. But the English clergymen who were similarly engaged, but who did not take onions in like fashion, caught the infection, and fell victims to the disease in many instances.

Likewise garlic formed a principal ingredient in the famous "Four thieves' vinegar," which was employed successfully at Marseilles for protection from the plague when it prevailed there.

Before proceeding to consider the latter stages of a catarrh in the head and chest, I will revert briefly to the first access of the chill which starts the cold before any reactionary feverishness has been provoked. And my object in doing this is that I may say a few words about a hot bath, or a Turkish bath, as desirable things to be then employed. Naturally the thoughts are directed to the immediate use of one or other of these processes, as soon as apprehensions occupy the mind that a general chill has been taken, and that the volume of blood which ought to be actively circulating about the surface of the whole body has been stagnated inwards. But the question should be entertained whether it will not better serve to economise the strength of the patient (unless this strength is of undoubted sufficiency) if a hot footbath is substituted, with complete animal and nervous rest straightway afterwards on the sofa or in bed, and with warm drinks, to promote perspiration,—in a room at a suitable temperature. Or, the alternative may be discussed of hot fomentations for twenty or thirty minutes over the whole belly, as has been explained on a previous page, whilst lying absolutely at rest in bed. This last proceeding will be specially appropriate if the digestion seems to have been evidently disturbed by the chill. Otherwise, if there is no apparent cause for raising any objection on either of these scores, a hot bath at from 98° to 105° Fahr. taken for some ten minutes will help admirably to so stimulate the entire skin surface of the body as to recall the blood back into its capillary channels from which the chill has repelled it. But at the same time it must be remembered that the degree of heat at which the hot bath is thus taken overpowers for the moment all protective reaction, and leaves the blood-vessels of the whole skin surface with relaxed and enfeebled coats. This may be obviated by rubbing over the trunk and the limbs speedily afterwards with a wet towel wrung well out of cold water, and then with a dry towel, or, if the patient feels averse to doing so, he should get forthwith into bed, and remain there until the next day, in order that the skin may have time and opportunity for gradually recovering its balance and its tone. There is the important advantage attending a hot bath taken in this way, that it can be had at home without any risk from facing cold air, or from unavoidable bodily effort in going afterwards from the bath to the house. But no such immunity from risk can be secured if a Turkish bath is preferred, seeing that this can only be got at some distance from home. Moreover, the heated dry air of the hot chamber may prove very trying to the respiratory passages already involved in the effects of a chill which has been contracted by the whole system. These several considerations should be fully weighed before the determination is arrived at to visit the Turkish baths, or to take a hot entire bath at home instead of the partial footbath, or the hot fomentations over the bowels, to stimulate and soothe at one and the same time.

When the middle stage of a catarrh has been reached, whilst any disposition to bronchitic congestion of an active sort is kept in check by the medicinal bryony, and whilst any tendency to acute inflammation of the lungs is forthwith met, if necessary, by the phosphorus,—a more liberal and more generous allowance of food will be required than during the first day or two of febrile excitement. The reaction now felt by the system and the more copious defluxion established of thicker mucus from the nasal and bronchial passages will render this increase of supplies essential to maintain the strength.

At this period of a catarrh in the head and upper chest, the old adage should be held true,—that it is right to stuff a cold, whilst it would be dangerous to give solid food in a fever. Beginning now with strong animal soups, and with fish (including oysters, which are admirably adapted for the occasion) and white meat, the dietary may be presently enlarged to mutton and tender beef, and to the substantial but wholesome dishes of ordinary daily life. Sir Thomas Watson, in his classical Lectures on Medicine (1847), taught that not uncommonly in well-judged cases—when a catarrhal cold was becoming persistent, but with only passive symptoms of much defluxion and of general weakness—a good dinner and some generous wine for the nonce would give the cold its *coup de grace.*

Certain other medical authorities rely with confidence on the administration at this catarrhal epoch of highly salted foods, such as herrings and haddock and the like, for completing the cure of the cold. In which same direction, though on a far more refined scale, Dr. J. H. Clarke pins his faith on a highly diluted trituration of common salt rubbed up patiently with sugar of milk to quite a remote fractional strength, and taken in this way every three or four hours. He says, "About eight years ago, when Dr. Burnett's work on Common Salt appeared, I made a study of it, and was struck with the number of symptoms analogous to those of common catarrh which the mineral produced when given in toxical doses. Having a pretty severe cold myself at the time, I took a few doses of this minutely subdivided trituration of salt, and was intensely delighted to find my cold quite cured in the morning. I soon repeated the happy experience on several patients; and my partner gave this same medicament, on my recommendation, to a patient of his who was suffering from a very severe cold. This patient declared he had never got rid of a cold so quickly in his life." "At that time," adds Dr. Clarke, "I thought that the range of the drug was so wide that it was equal to curing almost any cold. . . . Subsequent experience did not justify as much as this, but it did confirm me in my opinion that common salt, when properly administered, is one of the most valuable remedies for a cold we possess." It scarcely seems credible that mechanical trituration, however continuously employed, of this mineral, which enters minutely into so many esculents of our everyday use, should be able to endow it with any such potential curative powers. Yet we know of allied instances in which a subtle subdivision of its parts quite alters the character of a medicine, as notably with respect to mercury, which is almost inert when swallowed in its crude state, but a grain of which produces most marked toxical effects when rubbed up with common chalk—as gray powder—in the proportions of one part of mercury to two parts of chalk. It is to be remembered also that the salt obtained from mines differs somewhat in its chemical constitution from salt when got from the sea, which is not pure salt. This fact may in some measure account for the remarkable cures which Dr. Burnett succeeded in effecting with the triturated mineral when given to patients living at the seaside for long standing maladies which had proved otherwise intractable. His convincing and capitally written little book on the subject in question is well worth reading, and embodies most useful instruction. We may bear in mind too upon this point the fact that many of the valuable saline mineral waters contain quite a fractional proportion of common salt, as, for example, that of Ems, which furnishes only 7·27 grains in 16 ounces, *i.e.* 7680 grains, or, roughly speaking, one in a thousand. Whatever curative virtues stand possessed by common salt when highly triturated, these should be still more closely applicable to the second stage of influenza with its special characteristics than to the same epoch of ordinary catarrh. According to its provings, salt, in doses short of its toxical effects, is well calculated to cure "Malarious fever (when passive) with a hammering headache, and a tendency to fulness of the spleen, and much depression of the spirits accompanied by hopelessness about the future." All these symptoms are generally grouped together in the case of a patient after five or six days of active influenza, so that at this time—both for influenza and for a common catarrh—triturated salt at table, instead of the usual crude salt in the salt-cellar, may be beneficial, and cannot act at all injuriously.

Lowness of spirits and sheer prostration of strength are not associated to the same extent with the advanced days of a cold in the head and chest as with those of influenza; and even against the former physical disabilities a determined patient will make a bold stand, though he runs the risk of a relapse in doing so. Lately it has happened that the managers of several large establishments whose employés were declared on the sick-list through influenza, went, prompted by a kind regard for the invalids, to visit them at their homes, and almost invariably found the patients out and about in search of recreation and convalescence. Others will do their best to while away the tedium of confinement to the house by engaging in some exercise of their ingenuity. The original microphone was the result of inventive faculties thus brought to bear upon such simple materials as a couple of pieces of hard carbon and a child's toy churn, as the *World* newspaper has recently told us. And this kind of courageous fortitude is famously helpful for promoting a more speedy restoration to health than can be expected when the patient is moody and despondent and faint hearted.

A fair allowance of some alcoholic stimulant, good in quality and taken only at meal times, is certainly to be commended in most cases as an attack of catarrh passes on to its chronic state, with a sense of lassitude and with general weakness—provided always there be no concomitant signs of actual bronchitis or of lung congestion. If either of these prohibitive states is suspected, then medical advice should be asked about the propriety or otherwise of taking any stimulants. But if no such hindrances are now realised to making headway with more generous food and an allowance of alcohol, then a glass of sound Burgundy or of good claret or of stout, according to the purse and the palate of the patient, may be taken with unquestionable benefit when suitable food is had at mid-day, and again in the evening.

If much defluxion of thick mucus persists from the nose and the large air-tubes, by reason of a relaxed state of the mucous membrane which lines these parts, it will be found of good service to sniff cold water well into the nostrils, even as far as their hinder recesses, twice or three times a day; also to spray the throat well with iced water by means of the spray diffuser. And as a capital renovator of functional nervous power to the main organs of circulation and of breathing and of digestion, the employment once a day, at noon, of what is known in the hydropathic cure as a spinal wash will be found an undoubted adjuvant. This process consists in applying water—cold or nearly so—by jugfuls to the whole length of the spine, from the neck downwards, during three, four, or five minutes, while the patient sits on a board conveniently placed across the top of an ordinary sitz-bath, with his back towards the water. An attendant then pours the water from a jug which holds from half to one gallon, continuously and repeatedly, adown the spine, emptying the jug as he brings it along the back, during which time the patient should lean a little forward so that the stimulating water may reach every part of the spinal column. Sometimes a large sponge is used for this purpose instead of a jug; but not so conveniently or effectively.

Generally the water applied in this manner with a jug may be employed cold, or for a patient of delicate constitution at 60° Fahr. Sometimes it will be found desirable to begin by fortifying the spine with a jugful of quite hot water at 98° poured all down its length for half a minute, and then jugfuls of cold water may be used in like manner for a couple of minutes all down the back. Brisk rubbing of the back should be next pursued with a rather rough dry towel until a comfortable reactionary glow of the skin over the whole spine has been induced. Then the patient should dress expeditiously, and should have a moderately active walk out of doors if the weather permits, and if other circumstances do not interdict this freedom of action. The spinal washing should be conducted in the daytime, about noon for choice; and before a principal meal.

On first leaving the house after an attack of cold in the head and chest, care must be taken to keep moving, and not to loiter in a garden, or aimlessly on the high road. Also passive exposure to cold damp winds or to draughts must be guarded against. In persons of delicate organisation, or who inherit pulmonary susceptibilities, the period of weakness and of liability to congestions is sometimes very persistent after a troublesome attack of simple catarrh; and, unless proper care be taken (though without timid coddling), an insidious form of chronic bronchitis, with wasting, or of fibrinous consumption, will creep on to a serious or fatal extremity. The tonic mixture of phosphoric acid which has been explicitly mentioned in Part I. will be a very appropriate preventive of any such mischief whilst the catarrh proceeds to its termination. Four or five drops of this tincture may be given to an adult three times a day, with a tablespoonful of cold water, half an hour after meals. As the medicine becomes assimilated and disintegrated within the body, some free phosphorus is given off into the blood; which medicament is signally and specifically preventive of lung mischief. In the same way that curious little English bog plant the Sundew (*Drosera rotundifolia*) has remarkable virtues inherent in itself which are antagonistic to consumptive deterioration of the lung tissues. Country people have long observed that the sundew causes a violent chronic cough in sheep who eat the plant amongst the herbage of low-lying wet lands; under the continuance of which cough the animals slowly waste away.

A knowledge of such facts has influenced certain physicians to test the medicinal effects of the plant both upon other animals and curatively upon mankind. Dr. Curie (as we learn in *Pharmacodynamics*) reported to the French Academy of Sciences that he had slowly poisoned three cats with daily doses of the sundew. Diarrhœa at first, and weakness of voice later on, were the only symptoms observed during their life; when examined after death the surfaces of their lungs were found to be studded with the tuberculous deposit of consumption.

Therefore, seeing that cats are not at all liable to tubercle, the author justly surmises that the sundew caused this morbid deposit. And Dr. Curie goes on to assert that in the earliest stages of tubercular consumption a cure may nearly always be effected by medicinal doses of the sundew, administered regularly and systematically.

A tincture is made from the plant by some of our leading druggists, and may be always obtained from their dispensaries. Three or four drops of the tincture should be given with half a wine-glassful of cold water twice a day, at noon and at night; but occasionally missing a day. This medicine is likewise of essential use in the uncomplicated stages of whooping-cough, after the first febrile symptoms of that disease have become subdued.

Dr. Hughes, the author of *Pharmacodynamics*, found it necessary in some cases to employ a weaker tincture of sundew than that which is ordinarily made. The undiluted tincture tended to aggravate the incipient cough of consumption; but, by mixing some of this tincture with twice the same quantity of spirit of wine, and then giving it in doses of three or four drops, all the beneficial and curative effects of the remedy were realised.

As the sundew produced hoarseness and a constant harassing cough from the windpipe when given in large experimental doses, it is thus shown to be specially applicable to that form of consumption which begins in the larynx, with loss of voice and with an irritative spasmodic cough proceeding from the same part. The plant is called red-rot in many parts of England because of its injurious effect upon sheep.

Another medicament, which is not well known to physicians in general, but which affords most excellent relief to a chronic cough accompanied with digestive derangements, is the club-moss of our hilly pastures and heaths (called botanically Lycopodium from the fancied resemblance of its trailing stems to a wolf's foot). The spores of this plant yield a fine pale yellow powder, which is unctuous and dusty, but tasteless and without any odour. This powder is very inflammable, and has been used until lately in theatres for making flashes of mimic lightning. It swims on water without becoming wetted, and may be collected from the moss in the summer and autumn. For medicinal purposes the powder is patiently pounded and rubbed together with sugar of milk until its individual particles are so fractured that their oily contents become set free.

Any preparation of the drug which does not involve this complete fracture of the component particles will fail to do any good as a medicine. Trituration for at least two hours is necessary before this property of the powder is developed. Such a trituration can be obtained from the leading chemists and druggists; and an ethereal tincture is made from the spores, but this is not so reliable as the powder. When the Lycopodium has been given with the object of proving its potential effects in excessive doses, the symptoms produced have been "a passive catarrh of the air-passages, depressed digestion, mental and bodily weakness, an exhausting cough, and thick yellow expectoration from the pulmonary mucous membranes. In a corresponding way, when a series of symptoms closely resembling those which are here particularised has arisen after an attack of catarrh in the head and chest, then the remedial use of the triturated club-moss powder has been found signally beneficial. Dr. Pope teaches that few medicines are so valuable in pulmonary consumption as this is, if perseveringly used: "The cough, the digestive irritability, the exhaustion, and the intercurrent attacks of pain in the chest are wonderfully mitigated by it." Dr. Meyhoffer says he had no opinion of the club-moss until he was led to try it in chronic inflammation of the lungs; but since then he has had for it a profound respect. In its remedial aspcet it especially suits patients whose complexion has grown sallow, whilst the extremities are cold and the digestive functions are torpid, with a tendency to constipation. A dose of the highly triturated powder should be given once daily, between two principal meals; this dose being as much of the powder as will lie—rather heaped up—on the flat surface of a sixpence. It should be mixed with a dessertspoonful of cold water at the time of administration.

Under the ordinary circumstances of a progressive catarrh, if the season of the year is mild and fine, some outdoor air and exercise may be resumed with positive advantage after the first four days. Any unnecessary prolongation of confinement to the house will lower the general vitality because of incomplete oxygenation of the blood. If the bodily temperature is at the health level (or perhaps below it), without any sharp quickness of the pulse, or hard dry cough, or pain in the chest, or sense of inability to move about, then some outdoor diversion, under proper conditions of weather and place, will prove capitally restorative and reanimating. I need scarcely say that this step should be taken guardedly just at first, and without exposure to any chilling damp air or to a high keen cold wind. Still better, if it can be managed presently, will be a change altogether of air and scene for a week or more to the sea-coast, or to a high dry mountainous district, with healthful breezes and an augmented supply of ozone.

This latter remedial agent, about which much has been said of late as affecting mankind for good or ill, is an altered constitution of the atmosphere as regards its oxygen, which is broken up by electricity so that its molecules rearrange themselves to form a new element. The ozone thus produced has a much closer resemblance to chlorine than to oxygen in its activity; and chlorine is a powerful antiseptic purifier. Ozone has a strong oxidising property, and alters the character of the blood. It is poisonous to all low organisms of life, and when present in large quantities it causes severe irritation of the human respiratory passages; but when occurring only in a moderate proportion in the atmosphere it is beneficial by destroying morbid germs, and is a decided soporific against nervous disquietude. An ozonised state of the atmosphere is specially met with on high mountainous lands and on sea-coasts where electrical disturbances and storms chiefly prevail.

To epitomise what has been said about catarrh, or a common cold in its later stages, I recapitulate the main points which we have been just considering. The catarrhal state of defluxion may become simply chronic; and so entail nothing more than obstructive inconvenience of the nose and chest, with some drain on the mucous membranes involved, and some personal discomfort from a loose harmless cough. In this case the astringent application of topical cold, with fresh air and sunshine and with a liberal diet, will presently banish the minor evils, and will complete the cure. Or, in delicate persons, with some predisposition to pulmonary disease and of sedentary habits, the chronic stage of what began as an ordinary catarrh may become complicated by symptoms of impeded lungs, or of incipient tubercular deposits.

More or less hectic fever, with night sweats and with some wasting of the body, will indicate this complication, whilst the cough assumes a more violent and persistent character; and changes present themselves in the sounds which a doctor is able to discern and to distinguish in the lungs with the stethoscope.

When this serious condition of things threatens or actually sets in, the use of the sundew tincture on account of its specifically preventive effects, and in combination with the dilute phosphoric acid as a tonic calculated to obviate mischievous disease in the lung tissues, will be the most appropriate treatment. And in conjunction with these remedial means a suitable place of sojourn, and a diet regulated under medical advice, should be adopted without delay.

Again, it may happen that the consumptive symptoms or the pulmonary embarrassments appear to proceed rather from an impaired state of the digestion through the catarrhal attack beforehand, than to the lighting up of any inherent disposition to tubercular disease. And now the use of the club-moss will be in all respects proper, and likely to have beneficial results; whilst at the same time due regard must be paid to the food, as well as to the place of residence, touching its climate and its hygienic surroundings.

Instead of combining the dilute phosphoric acid with the administration of the club-moss, it will be found better to give dilute nitric acid as the most beneficial tonic for restoring digestive power and activity of function. From five to ten drops of this dilute nitric acid may be given with half a wine-glassful of cold water, twice a day, soon after a principal meal, throughout several weeks. And a dose of the club-moss powder may be given simultaneously, twice daily, in a dessertspoonful of water at some intermediate times.

Nitric acid in strong toxical doses acts injuriously on those parts of the mucous membranes which come in contact with the atmospheric air, especially as regards the throat, the windpipe, and the nose passages. It retards the assimilative powers of the liver at the same time, and provokes jaundice, with congestion of the bile-making organs. And it is remarkable for inducing, when thus too largely administered, an obstinate chronic cough from the windpipe, which is dry and violent. Just such a cough is observed to occur of its own accord in the kind of pneumonic consumption now under our notice. For these collective reasons it is found that nitric acid in a sufficiently diluted form, and in quite reduced doses, is eminently curative, when an intractable chronic cough after an attack of catarrh is accompanied by indigestion and biliary difficulties and great general weakness with wasting.

As to the giving or withholding alcoholic support, or stimulation in the states which I have now discussed as ensuing after a common cold in the head and chest—this subject has been already adequately considered. I have also made comments on the sort of beverage which should be selected for varying requirements under the different aspects and effects of catarrh.

Dietetically as a restorative I mentioned incidentally on a previous page one special food which may well claim a somewhat more extended notice at my hands as of remarkable value in exhaustive disease of the chest organs—I mean the oyster. This mollusc, because of its easy digestibility and of its richness in phosphates to build up defective tissues, as well as to replenish vital forces, is calculated to render admirable services to the consumptive patient, and to the invalid when making but a slow progress towards recovery. It has been known and extolled as highly nutritious since the old Roman days of Horace and Martial and of the oyster-beds at Baiæ, the fashionable Brighton of the Roman Empire. A famous physician, Ambroise Paré, in 1550, wrote a treatise in favour of the bivalve as a medicinal strengthener; and he further advocated the application of oysters in the shell directly to any inflamed and angrily sore part as a superlatively useful poultice.

For the cure of pulmonary lesions through promotion of the general vitality, as well as by the action of the iodine and the marine lime salts and iron and sulphur which the oyster contains, it is a model form of nutriment and of medicine, happily and deliciously combined. The liquor with which the oyster is found to be furnished inside the shells when they are opened is particularly rich in these curative and restorative constituents. But unfortunately oysters nowadays do not come within the reach of persons with slender purses, though the cultivation of this favourite and coveted delicacy is being extended with the fair promise of increased supplies and of greater cheapness.

Nevertheless, the prevalence of chronic coughs, and of much sickness from their after effects among the humbler classes of the community, is only too audible and too patent in our streets; whilst among congregations and assemblies in our churches and theatres, the frequent and noisy interruptions from coughs which cover the whole gamut of sounds from deep bass to childish treble, especially during the winter months, are never ending. Moreover, we may judge from the extensive demand for cough lozenges and other pectoral sweetmeats, how widely spread and deeply rooted are the chronic coughs and perpetual colds which afflict persons in the lower ranks of life. Lozenges for these complaints are sold by the half hundred-weight in our leading thoroughfares on a Saturday night, when poor persons do their marketing; and the more numerous and high sounding the alleged ingredients the greater is the popularity of the article. I have seen many a pound sold within an hour by pennyworths of such lozenges, well made and abundantly dusted with an herbal powder, the ingredients of which were (as explained in brilliant letters of blue and red on a conspicuous board, with mighty flourishes of the paint-brush), "horehound, marsh-mallows, liquorice, balm, sweet mint of India, oil of cachia, honey, and pure maple sugar"—"Good for coughs, colds, and other pulmon'ry *e*ffections of the lungs and of the throat!"

It is well worth the notice and practical remembrance of those who are troubled with a chronic cough after catarrh, and particularly if there is any co-existent tendency to consumptive disease, that valid help may be derived by them from some of our English herbal simples.

For instance, the common watercress (*Nasturtium* *officinale*) has been long held in the highest esteem as an antiscorbutic, or scurvy-curing remedy. Haller says, "We have seen patients in a deep decline cured by living almost entirely on this plant." Dr. T. King Chambers, when treating of the same subject, and attributing much of the disposition to tubercular mischief which occurs among the poor of our large towns to their difficulty in procuring fresh antiscorbutic vegetables, says, "the watercress-seller is one of the saviours of her country." This plant is essentially beneficial because it contains sulphur, iodine, iron, and some phosphates, the measure of the last-named constituent being determined by the soil in which the watercress grows. The expressed fresh juice, which affords the peculiar taste and pungency of the herb, may be taken in doses of two or three tablespoonfuls once or twice a day. Also the plant should be eaten fresh at each of the ordinary meals, for the patient to experience full benefit from its virtues.

Another common herb which is of similar value for the relief of a chronic cough and for the prevention of consumptive disease is the great mullein (*Verbascum thapsus*), or the hedge-taper of our roadsides. It is readily known by the large thick woolly leaves and the golden yellow flowers which distinguish it, lying close together on a long terminal spike.

Throughout Ireland from time immemorial the great mullein has been a trusted popular remedy for the cure of pulmonary consumption. Advertisements constantly appear in the Irish newspapers offering it for sale; and this in obedience to a steady demand by the consumptive for its supply. The old Irish method of administering the mullein is to place an ounce of the dried leaves—or nearly twice as much of the fresh leaves—in a pint of milk, which is then boiled for ten minutes and strained. This fluid is then given warm to the patient twice a day, with or without sugar; and it undoubtedly palliates the worst symptoms even in advanced cases, whilst leading to an increase of weight. Likewise the dried leaves of the mullein plant, if smoked in an ordinary tobacco-pipe, will completely control the hacking cough of consumption. The term "malandre" was formerly applied to the lung diseases of cattle; and the hedge-taper, being found curative of these maladies, acquired the names of "mullein" and "bullock's lungwort." A concentrated juice both of this plant and of the watercress is prepared and supplied by Messrs. Corbyn, druggists, of London, for ready use; the dose of either being from one to two teaspoonfuls.

Mucilage abounds in the leaves and flowers of the mullein; and the latter contain a yellowish volatile oil, with a fatty substance, some sugar, and some colouring matter. Dr. Quinlan, physician to St. Vincent's Hospital, Dublin, has recorded in the *British Medical Journal* a series of consumptive cases treated with mullein very successfully. The seeds of this plant, when thrown into a pond, stupefy the fish so that they may be taken with the hand.

I may introduce one other plant, with which every one is tolerably familiar, the Arum maculatum or "lords and ladies" of our English fields and moist hedgerows. It is also called the cuckoo-pint or wake-robin or parson-in-the-pulpit, and its fresh juice when tasted causes a burning stinging irritation of the mouth and throat. A medicinal tincture is made from the whole plant, which is admirably curative of a chronic sore throat produced by continued catarrh, and characterised by a rough swollen state of the mucous lining, together with vocal hoarseness.

From five to ten drops of the tincture may be given, with a tablespoonful of cold water, twice a day; and some of the tincture mixed with an equal quantity of cold water should be sprayed well into the back of the throat with the spray producer.

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